

Access DB# 90165

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: WYROZEBSKI Examiner #: 71177 Date: 3/27/03
Art Unit: 1714 Phone Number 306-5875 Serial Number: 09/856,845
Mail Box and Bldg/Room Location: CP3, SE09 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

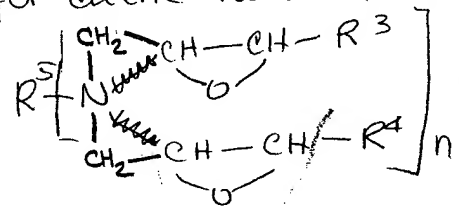
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Rubber Composition
Inventors (please provide full names): SAITO et al 28

Earliest Priority Filing Date: 9/27/1999

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for diene rubber modified with



R^{3,4,5} C1-C10
hydrocarbon
ether and
tertiary amine

Use in tires w/ silica & vulcanizing agent

Thank you.

STAFF USE ONLY Type of Search Vendors and cost where applicable

Searcher: ES NA Sequence (#) STN \$298.77
Searcher Phone #: _____ AA Sequence (#) _____
Searcher Location: _____ Structure (#) (4) Dialog
Date Searcher Picked Up: _____ Bibliographic (and) Questel/Orbit
Date Completed: 3-28-03 Litigation _____ Lexis/Nexis _____
Searcher Prep & Review Time: 5 Fulltext _____ Sequence Systems _____
Clerical Prep Time: _____ Patent Family _____ WWW/Internet _____
Online Time: 65 Other _____ Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 11:28:01 ON 28 MAR 2003
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=> d his

FILE 'HCAPLUS' ENTERED AT 10:43:22 ON 28 MAR 2003

L1 65662 S SAITO ?/AU
L2 68987 S YAMADA ?/AU
L3 15952 S KUBO ?/AU
L4 27 S NAKAFUTAMI ?/AU
L5 1 S L1 AND L2 AND L3 AND L4
SEL L5 1 RN

FILE 'REGISTRY' ENTERED AT 10:44:53 ON 28 MAR 2003

L6 9 S E1-E9
L7 3 S L6 AND N/ELS
L8 6 S L6 NOT L7
E BUTADIENE/CN
L9 2 S E3
SEL L9 1-2 RN
EDIT E1-E2 /BI /CRN
L10 9124 S E1-E2

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L11 STR

FILE 'REGISTRY' ENTERED AT 11:01:09 ON 28 MAR 2003

L12 50 S L11
L13 2485 S L11 FUL
SAV L13 WYR845/A

FILE 'LREGISTRY' ENTERED AT 11:07:39 ON 28 MAR 2003

L14 STR L11

FILE 'REGISTRY' ENTERED AT 11:09:11 ON 28 MAR 2003

L15 50 S L14 SSS SAM SUB=L13
L16 1514 S L14 SSS FUL SUB=L13
SAV L16 WYR845A/A
L17 10 S L13 AND L10

FILE 'HCAPLUS' ENTERED AT 11:11:50 ON 28 MAR 2003

L18 7 S L17

FILE 'REGISTRY' ENTERED AT 11:11:53 ON 28 MAR 2003

L19 6 S L16 AND L10

FILE 'HCAPLUS' ENTERED AT 11:12:58 ON 28 MAR 2003

L20 6 S L19
L21 296530 S L10 OR ?DIENE?
L22 5183 S L13
L23 4276 S L16
L24 353 S L21 AND (L22 OR L23)
L25 356589 S RUBBER?
L26 315560 S VULCAN? OR SULFERIZ? OR SULFERIS? OR SULFURIZ? OR SULFU
L27 22505 S TIRE# OR TYRE#

FILE 'REGISTRY' ENTERED AT 11:17:23 ON 28 MAR 2003

E SILICA/CN
L28 1 S E3

FILE 'HCAPLUS' ENTERED AT 11:18:10 ON 28 MAR 2003

L29 619418 S L28 OR (SILICON OR SI) (W) (OXIDE# OR DIOXIDE#) OR SILICA
L30 17 S L24 AND L27
L31 269 S L24 AND L25
L32 141 S L31 AND L26
L33 28 S L31 AND L29
L34 18 S L32 AND L33

FILE 'LREGISTRY' ENTERED AT 11:19:05 ON 28 MAR 2003

L35 STR

FILE 'REGISTRY' ENTERED AT 11:20:50 ON 28 MAR 2003

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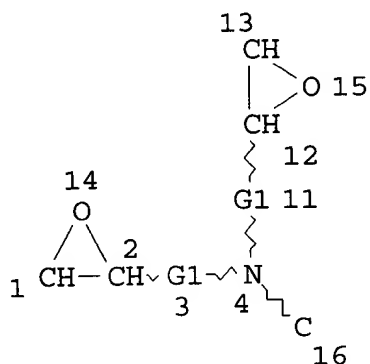
L38 1 S L37

FILE 'HCAPLUS' ENTERED AT 11:21:39 ON 28 MAR 2003

L39 4 S L37
L40 11 S L18 OR L20 OR L39
L41 30 S (L30 OR L34) NOT L40

FILE 'REGISTRY' ENTERED AT 11:28:01 ON 28 MAR 2003

=> d l13 que stat
L11 STR



REP G1=(0-1) CH2
 NODE ATTRIBUTES:
 NSPEC IS RC AT 16
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
 L13 2485 SEA FILE=REGISTRY SSS FUL L11

100.0% PROCESSED 28714 ITERATIONS
 SEARCH TIME: 00.00.01

2485 ANSWERS

=> file caold
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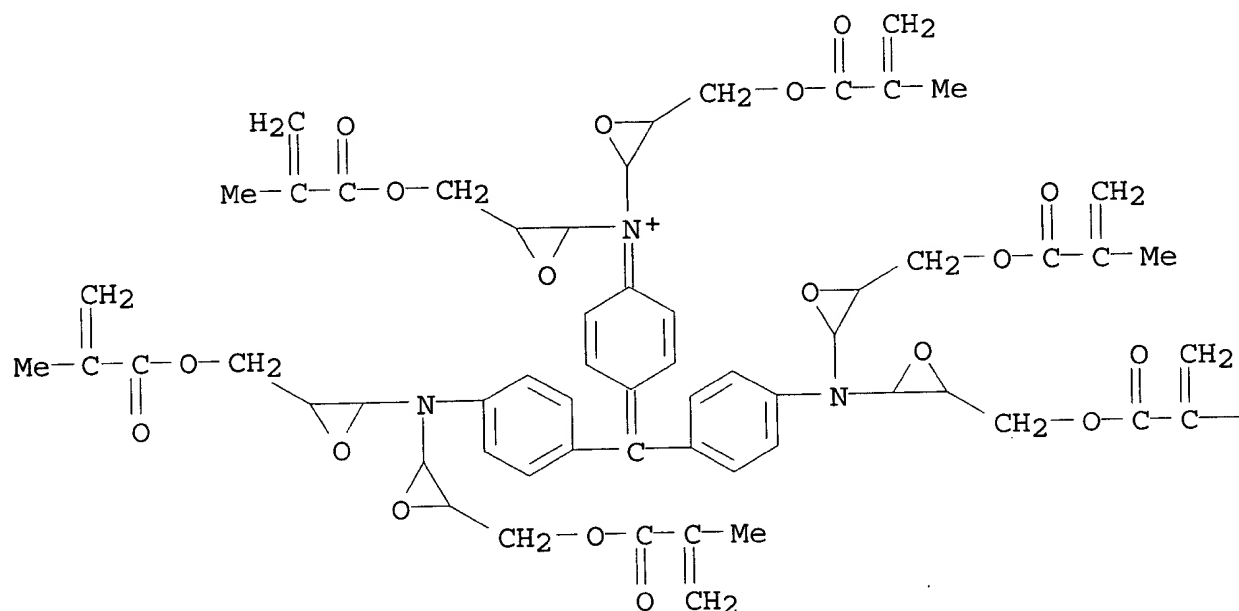
FILE COVERS 1907-1966
 FILE LAST UPDATED: 01 May 1997 (19970501/UP)

=> d l38 1 all hitstr

L38 ANSWER 1 OF 1 CAOLD COPYRIGHT 2003 ACS
 AN CA62:9283g CAOLD
 TI dyeing of cuprammonium fibers graft copolymerized with glycidyl
 methacrylate
 AU Nakahara, Yasuji
 IT 632-99-5 10162-36-4 29003-32-5
 IT 10162-36-4 29003-32-5

RN 10162-36-4 CAOLD
 CN Ammonium, [4-[4-[bis(1,2-epoxy-3-hydroxypropyl)amino]-.alpha.-[p-[bis(1,2-epoxy-3-hydroxypropyl)amino]phenyl]-3-methylbenzylidene]-2,5-cyclohexadien-1-ylidene]bis(1,2-epoxy-3-hydroxypropyl)-, chloride, hexamethacrylate (ester) (8CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

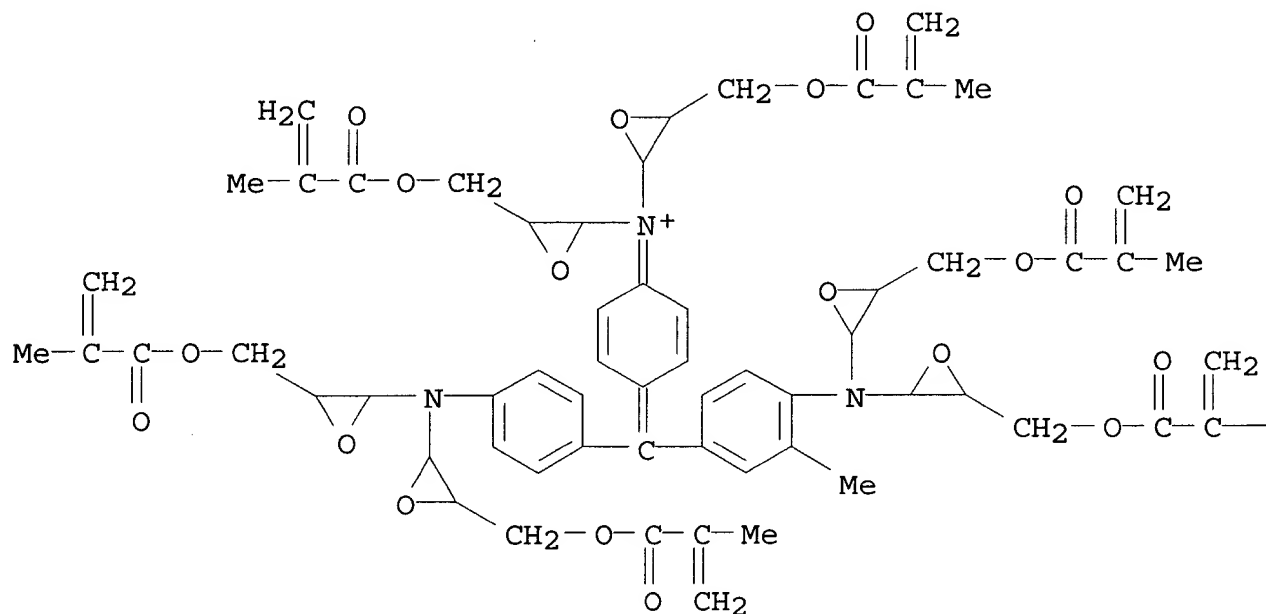
● Cl⁻

— Me

RN 29003-32-5 CAOLD
 CN Ammonium, [4-[4-[bis(1,2-epoxy-3-hydroxypropyl)amino]-.alpha.-[p-

[bis(1,2-epoxy-3-hydroxypropyl)amino]phenyl]-3-methylbenzylidene]-
2,5-cyclohexadien-1-yliden]bis(1,2-epoxy-3-hydroxypropyl)-,
chloride, hexamethacrylate (ester) (8CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

● Cl⁻

— Me

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 11:29:10 ON 28 MAR 2003

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=> d 140 1-11 cbib abs hitstr hitind

L40 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2003 ACS
1996:709783 Document No. 125:342732 Silver halide photographic material containing hydrazine derivative and poly(alkylene oxide) compound. Yasuda, Shoji; Yasuda, Tomokazu (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08211526 A2 19960820 Heisei, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-37814 19950203.

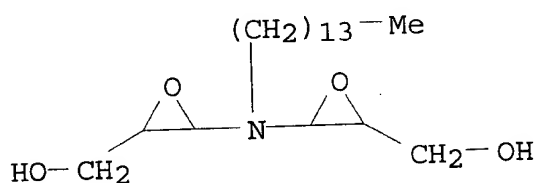
AB The material contains .gtoreq.1 hydrazine deriv. and .gtoreq.1 of R1AtX1GmY1 and R1AtX3CO(CHOH)nY2 [G = glycidyl; R1 = C1-40 aliph. group; A = arylene; X1, X3 = divalent group; Y1 = H, (CH2CH2O)iH, anionic group; Y2 = H, anionic group; i = 1-500; m = 1-50; n = 3-7; t = 0, 1] in the Ag halide emulsion layer or other hydrophilic colloidal layers. The material shows good development latitude and gives high contrast images by using low pH developer.

IT 183287-80-1
(surfactant; photog. film contg. hydrazine deriv. and poly(alkylene oxide) compd .)

RN 183287-80-1 HCAPLUS
CN Oxiranemethanol, 3,3'-(tetradecylimino)bis-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 183287-79-8
CMF C20 H39 N O4



IC ICM G03C001-043
ICS G03C001-06
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 126879-21-8 138575-14-1 183287-80-1 183287-82-3
183287-83-4 183287-84-5
(surfactant; photog. film contg. hydrazine deriv. and poly(alkylene oxide) compd .)

L40 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2003 ACS

1994:411374 Document No. 121:11374 Epoxy resin adhesive compositions. Sugimori, Masahiro; Kato, Takeshi; Ibuki, Tsutomu (Mitsubishi Rayon Co, Japan). Jpn. Kokai Tokkyo Koho JP 05339553 A2 19931221 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-147599 19920608.

AB The title compns. with good heat resistance and high peel strength contain (A) prereaction products contg. substantially no phenolic OH which are prepd. from epoxy resins and bifunctional phenols, (B) polyfunctional epoxy resins, (C) arom. amine compds., (D) rubber component, and optionally (F) thermoplastic resins with glass transition temp. $\geq 200^\circ\text{C}$. Thus, reaction of Epikote 807 (I) 400, ELM 100 (triglycidylamine epoxy resin) 300, and tetramethylbisphenol A 300 g gave a preproduct (II). Sep., 750 g I and 250 g CTBN 1300 (CO₂H-modified acrylonitrile-butadiene copolymer) were heated at 170°C to obtain a rubber preproduct, 35 parts of which was blended with II 30, YH 434L (tetraglycidylamine epoxy resin) 35, diaminodiphenyl sulfone 40, and Victrex PES 500SP (polyether polysulfone) 10 parts to give an adhesive for steel plates.

IT 155942-79-3

(adhesives, heat-resistant)

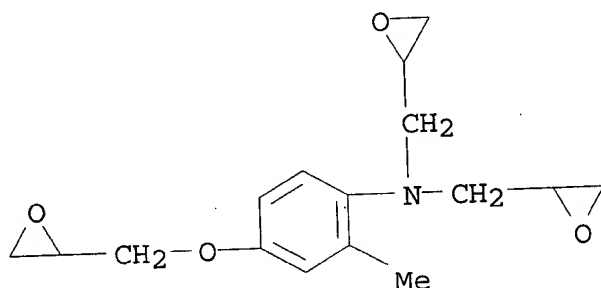
RN 155942-79-3 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene, (chloromethyl)oxirane, methylenebis[phenol], N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine], 4,4'-(1-methylethylidene)bis[2,6-dimethylphenol], N-[2-methyl-4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)oxiranemethanamine and ar,ar'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 110656-67-2

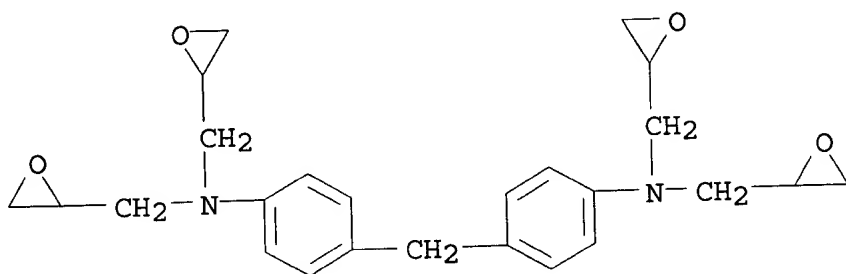
CMF C16 H21 N O4



CM 2

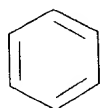
CRN 28768-32-3

CMF C25 H30 N2 O4

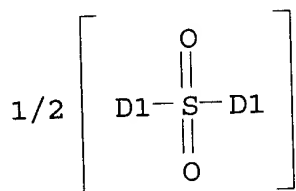


CM 3

CRN 27133-91-1
 CMF C12 H12 N2 O2 S
 CCI IDS

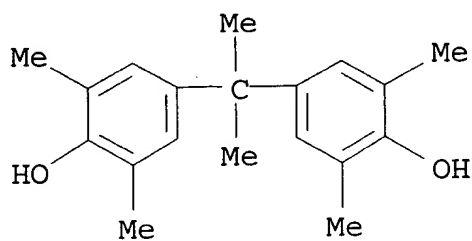


D1-NH2



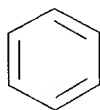
CM 4

CRN 5613-46-7
 CMF C19 H24 O2

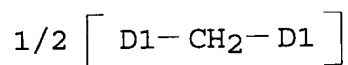


CM 5

CRN 1333-16-0
 CMF C13 H12 O2
 CCI IDS

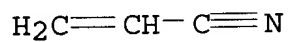


D1-OH



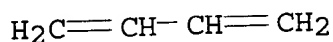
CM 6

CRN 107-13-1
 CMF C3 H3 N



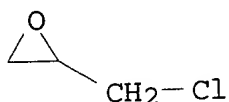
CM 7

CRN 106-99-0
 CMF C4 H6



CM 8

CRN 106-89-8
CMF C3 H5 Cl O



IC ICM C09J163-00
ICS C09J163-00
CC 38-3 (Plastics Fabrication and Uses)
IT 155942-79-3
(adhesives, heat-resistant)

L40 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2003 ACS
1994:272467 Document No. 120:272467 Epoxy adhesives for repair of composite structures. Part V. Dodiuk, H.; Buchman, A.; Liran, I.; Kenig, S. (RAFAEL, M.O.D., Haifa, 31021, Israel). Journal of Adhesion, 40(2-4), 127-38 (English) 1993. CODEN: JADNAJ. ISSN: 0021-8464.

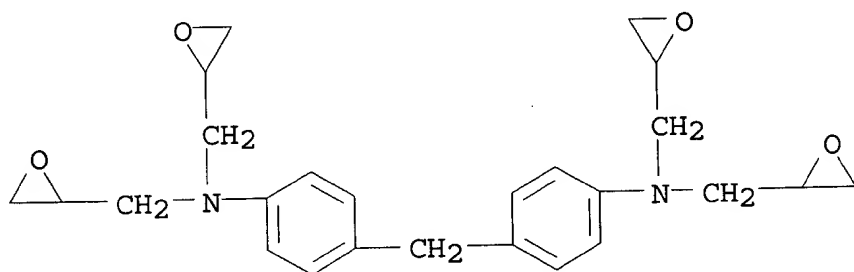
AB A reduced temp. epoxy formulation for repair of epoxy-graphite composite laminates was characterized. The epoxy formulation comprised selected high functionality arom. epoxy resins and a multi-component polyamine curing system contg. an elastomeric toughener. Exptl. results for bonding graphite-epoxy specimens have shown that, compared with a 175.degree.C com. film adhesive, the proposed formulation has better low temp. shear strength, comparable ambient properties, and lower elevated temp. (120.degree.) shear properties. The epoxy formulation exhibits the same in-plane shear modulus as the com. material and a plastic behavior at high shear strains. Consequently, the fatigue endurance of the epoxy formulation has been found to be superior to that of the 175.degree.C com. film adhesive.

IT 154733-11-6
(adhesives, for repair of graphite fiber-epoxy laminates)

RN 154733-11-6 HCAPLUS
CN 2-Propenenitrile, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine, 1,3-butadiene, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine] and N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)oxiranemethanamine (9CI)
(CA INDEX NAME)

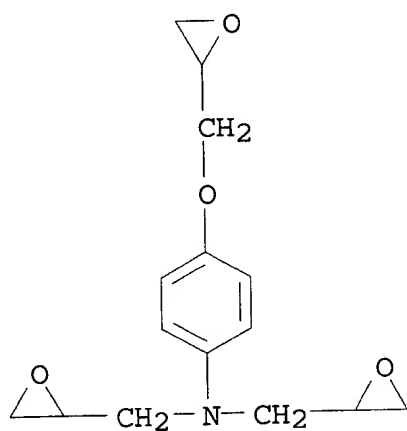
CM 1

CRN 28768-32-3
CMF C25 H30 N2 O4



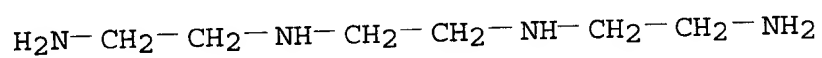
CM 2

CRN 5026-74-4
CMF C15 H19 N O4



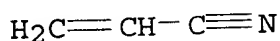
CM 3

CRN 112-24-3
CMF C6 H18 N4



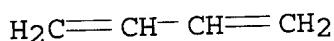
CM 4

CRN 107-13-1
CMF C3 H3 N



CM 5

CRN 106-99-0
CMF C4 H6



CC 38-3 (Plastics Fabrication and Uses)
IT 154733-11-6
(adhesives, for repair of graphite fiber-epoxy laminates)

L40 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2003 ACS
1994:219957 Document No. 120:219957 Modified polysiloxane curable compositions. Muramoto, Hiroo; Kubo, Hideo; Kurayama, Isao (Nippon Soda Co, Japan). Jpn. Kokai Tokkyo Koho JP 05271518 A2 19931019 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-101834 19920327.

AB The title compns. giving cured products with low modulus without lowering glass temp. (Tg), useful for semiconductor sealants, etc., comprise (A) modified siloxanes X(Y)n (X = polymer block contg. p-alkenylphenol; Y = siloxane block; n = 1-2), where 1/99 .ltoreq. X/Y .ltoreq. 90/10, no.-av. mol. wt. (Mn) 500-100,000, (B) epoxy resins, and (C) hardeners. Thus, 0.25 mol PTBST (p-tert-butoxystyrene) and 0.45 mol hexamethylcyclotrisiloxane were treated to obtain a prepolymer, which was treated in MEK with Cl gas to give p-vinylphenol-polydimethylsiloxane block copolymer with 13,000 Mn. Then, 10 parts of the polymer was blended with YD 128 (bisphenol A epoxy resin) 90, HN 5500 70, and 1B2MS (1-benzyl-2-methylimidazole) 0.9 part, then the compn. was hardened in a mold at 100.degree. for 5 h and at 200.degree. for 5 h to give test pieces showing shrinkage 3.0%, steel plate/steel plate tensile shear adhesion strength 168 kg/cm², Al/Al peel adhesion strength 3.3 kg/25-mm, Tg 118.degree., dielec. const. 3.0, and tan.delta. 11 .times. 10⁻³.

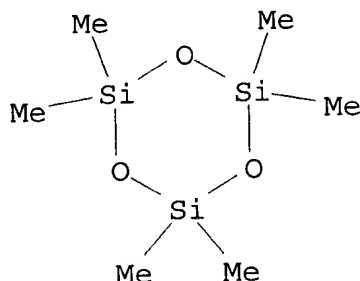
IT 154387-55-0
(crosslinked, heat-resistant, for sealants for semiconductors)

RN 154387-55-0 HCAPLUS
CN Phenol, 4-(1-methylethenyl)-, polymer with 1,3-butadiene, hexahydromethyl-1,3-isobenzofurandione, hexamethylcyclotrisiloxane and N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine] (9CI) (CA INDEX NAME)

CM 4

CRN 541-05-9

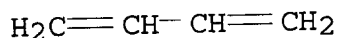
CMF C6 H18 O3 Si3



CM 5

CRN 106-99-0

CMF C4 H6



IC ICM C08L063-00

ICS C08G059-40; C08L063-00; C08L083-10

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

IT 154387-51-6 154387-52-7 154387-53-8 154387-54-9

154387-55-0 154387-56-1 154387-57-2

(crosslinked, heat-resistant, for sealants for semiconductors)

L40 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2003 ACS

1993:23393 Document No. 118:23393 Polybutadiene- and polymaleimide-containing epoxy resin compositions for laminates and their cured products. Oshimi, Fumiaki; Otsuki, Yutaka; Kubota, Susumu; Enomoto, Masami (Nippon Oil Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04114027 A2 19920415 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-230568 19900903.

AB The title compns., useful for dielec. and heat- and fire-resistant printed circuit boards, contain (A) adducts of phenols and butadiene (co)polymers with no.-av. mol. wt. 500-5000 and contg. .gtoreq.50% 1,2-confuration 100, (B) brominated epoxy resins 50-100, (C) .gtoreq.2 maleimide-contg. compds. 75-125, and (D) crosslinking accelerators 0.05-5.0 parts. Thus, a 700:1000 o-cresol-Nisseki B 1000 adduct 100, YDB 400 79.4, YH 434 (epoxy resin) 26.5, MB 7000 (bismaleimide) 88.2, and additives 3.3 parts in mixed solvents were

blended, impregnated glass cloths, and dried at 150.degree. for 15 min to give prepregs, 8 layers of which were laminated with Cu foils, and press-molded at 200.degree. to give test pieces showing dielec. const. 3.9, loss tangent 0.07 (both 1 MHz), good solder heat resistance, and UL-94 flame retardancy V-0.

IT 145197-34-8P

(prepn. of, dielec., heat- and fire-resistant, for printed circuit boards)

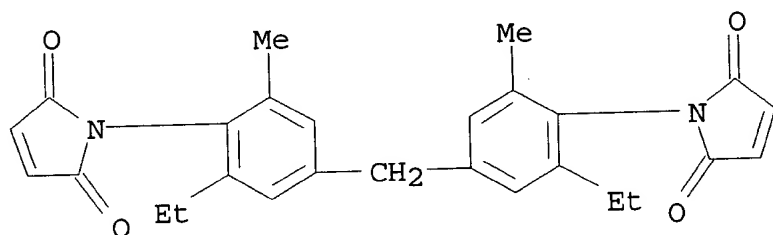
RN 145197-34-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1,1'-[methylenebis(2-ethyl-6-methyl-4,1-phenylene)]bis-, polymer with 1,3-butadiene, (chloromethyl)oxirane, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine], 4,4'-(1-methylethylidene)bis[2,6-dibromophenol] and 2-methylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 105391-33-1

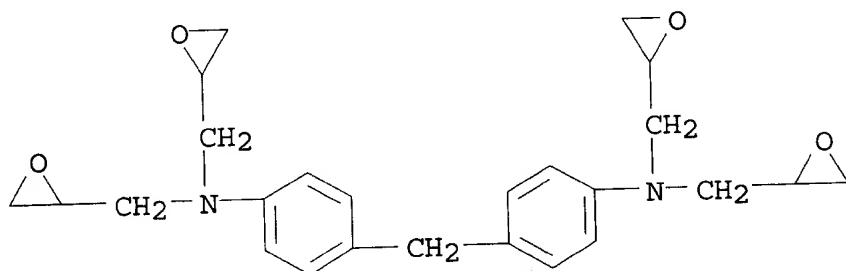
CMF C27 H26 N2 O4



CM 2

CRN 28768-32-3

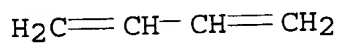
CMF C25 H30 N2 O4



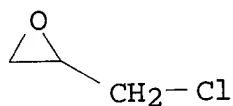
CM 3

CRN 106-99-0

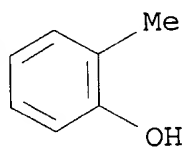
CMF C4 H6



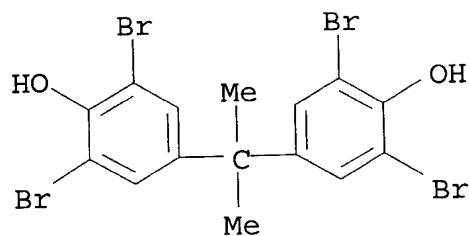
CM 4

CRN 106-89-8
CMF C3 H5 Cl O

CM 5

CRN 95-48-7
CMF C7 H8 O

CM 6

CRN 79-94-7
CMF C15 H12 Br4 O2IC ICM C08G059-62
ICS C08G059-30; C08G059-40; C08J005-24; H05K001-03

ICI C08L023-18
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 39, 76
IT 144307-33-5P 145197-34-8P
(prepn. of, dielec., heat- and fire-resistant, for printed circuit boards)

L40 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2003 ACS
1990:480052 Document No. 113:80052 Epoxy resin adhesives with mixed aromatic hardeners for flexible circuit boards. Suzuki, Akiyasu; Igawa, Katsuhiko; Takahashi, Toshinobu (Yokohama Rubber Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01304165 A2 19891207 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-134603 19880601.

AB Chem. resistant elec. insulating adhesive bonds which are not damaged by flexing are formed from epoxy resin compns. cured with gallic acid esters and diaminodiphenylmethanes and/or phenylenediamines, and alc. and/or phenol curing accelerators. Thus, the epoxy resins Sumiepoxy ELA 15, Sumiepoxy ELM 100, R 1348, and Sumiepoxy ESB 700 were mixed with flame retardants, Nipol 1072 (elastomer), Kayabond C 100 (3,3'-dimethyl-4,4'-diaminodiphenylmethane), Me gallate, dicumyl peroxide, and BuOH to give an adhesive. Then, Cu foil sheets were bonded to polyimide films using the adhesive and cured at 150-170.degree. for 1-3 h to give boards with good flexibility, which showed solvent resistance (bond strength retention after 15 min in MEK at 23.degree.) 90% and insulation resistance 6.4 .times. 10¹³ .OMEGA., vs. 57% and 5.7 .times. 10¹² .OMEGA. using a similar adhesive without the Me gallate or BuOH.

IT 128583-75-5 128583-76-6 128583-77-7
(adhesives, for flexible circuit boards, solvent-resistant, elec. insulating)

RN 128583-75-5 HCAPLUS
CN Benzoic acid, 3,4,5-trihydroxy-, methyl ester, polymer with ACR-R 1348, 1,3-butadiene, 4,4'-methylenbis[2-methylbenzenamine], N-[2-methyl-4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)oxiranemethanamine, 2-methyl-2-propenoic acid, 2-propenenitrile, Sumiepoxy ELA 115 and Sumiepoxy ESB 700 (9CI) (CA INDEX NAME)

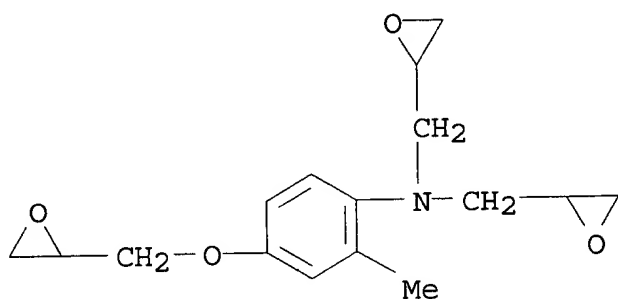
CM 1

CRN 127829-95-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 110656-67-2
CMF C16 H21 N O4



CM 3

CRN 102381-44-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

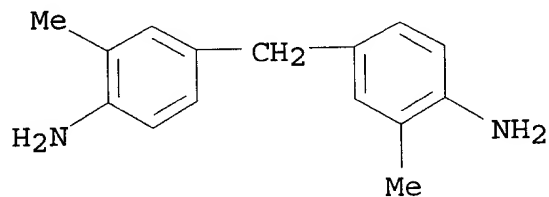
CM 4

CRN 61642-77-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

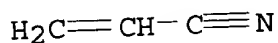
CM 5

CRN 838-88-0
CMF C15 H18 N2



CM 6

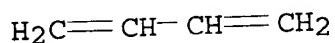
CRN 107-13-1
CMF C3 H3 N



CM 7

CRN 106-99-0

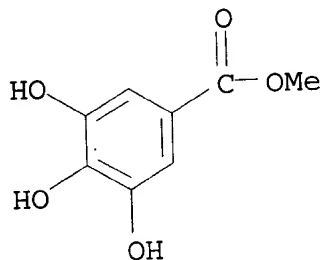
CMF C4 H6



CM 8

CRN 99-24-1

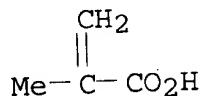
CMF C8 H8 O5



CM 9

CRN 79-41-4

CMF C4 H6 O2



RN 128583-76-6 HCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester, polymer with ACR-R
 1348, 1,3-butadiene, 4,4'-methylenebis[2-methylbenzenamine],
 N-[2-methyl-4-(oxiranylmethoxy)phenyl]-N-
 (oxiranylmethyl)oxiranemethanamine, 2-methyl-2-propenoic acid,
 2-propenenitrile, Sumiepoxy ELA 115 and Sumiepoxy ESB 700 (9CI) (CA
 INDEX NAME)

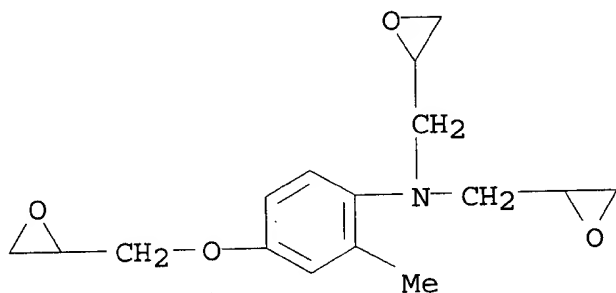
CM 1

CRN 127829-95-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 110656-67-2
CMF C16 H21 N O4



CM 3

CRN 102381-44-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

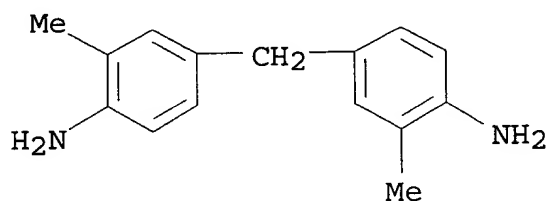
CM 4

CRN 61642-77-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 5

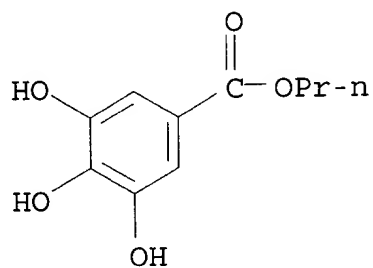
CRN 838-88-0
CMF C15 H18 N2



CM 6

CRN 121-79-9

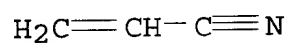
CMF C10 H12 O5



CM 7

CRN 107-13-1

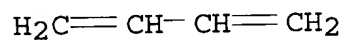
CMF C3 H3 N



CM 8

CRN 106-99-0

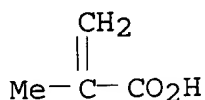
CMF C4 H6



CM 9

CRN 79-41-4

CMF C4 H6 O2



RN 128583-77-7 HCAPLUS
 CN Benzoic acid, 3,4,5-trihydroxy-, methyl ester, polymer with ACR-R
 1348, 1,3-butadiene, 4,4'-methylenebis[2,6-diethylbenzenamine],
 N-[2-methyl-4-(oxiranylmethoxy)phenyl]-N-
 (oxiranylmethyl)oxiranemethanamine, 2-methyl-2-propenoic acid,
 2-propenenitrile, Sumiepoxy ELA 115 and Sumiepoxy ESB 700 (9CI) (CA
 INDEX NAME)

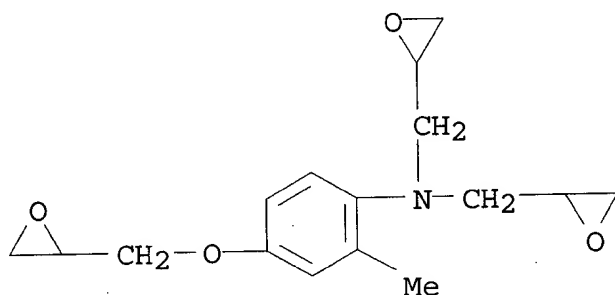
CM 1

CRN 127829-95-2
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 110656-67-2
 CMF C16 H21 N O4



CM 3

CRN 102381-44-2
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 4

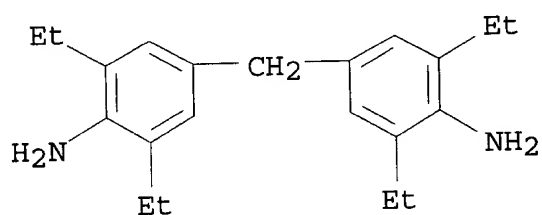
CRN 61642-77-1

CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

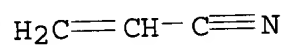
CM 5

CRN 13680-35-8
CMF C21 H30 N2



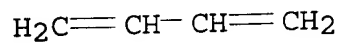
CM 6

CRN 107-13-1
CMF C3 H3 N



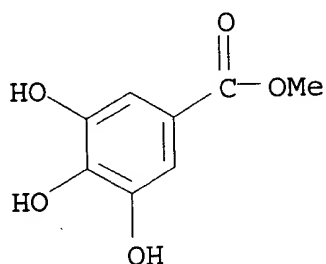
CM 7

CRN 106-99-0
CMF C4 H6



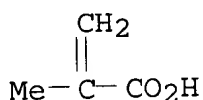
CM 8

CRN 99-24-1
CMF C8 H8 O5



CM 9

CRN 79-41-4
CMF C4 H6 O2



IC ICM C09J003-16
ICA C08G059-50; C08G059-62
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
IT 128583-75-5 128583-76-6 128583-77-7
128818-30-4
(adhesives, for flexible circuit boards, solvent-resistant, elec. insulating)

L40 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2003 ACS
1989:214356 Document No. 110:214356 Manufacture of epoxy resin adhesives for oil-coated steel sheets. Inaike, Toshihiro; Kunitura, Masaru; Niihama, Masaaki; Kawanishi, Kenji (Ube Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63227681 A2 19880921 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-63051 19870318.

AB The title adhesives are manufd. by dispersing solid reactive rubbers in reactive diluents (liq. at normal temp.) uniformly, then mixing with epoxy resins. Thus, 50 g Hycar 1072 (I) was mixed with 150 g alkylphenol monoglycidyl ether, and kneaded to give a uniform mixt., 40 g of which was kneaded with 160 g Epikote 828 for 2 h, and with 4 parts dicyandiamide and 6 g amorphous silica for 1 h to give an adhesive compn. Then, a piece of steel sheet coated with an anticorrosive oil was laminated with a Teflon spacer, coated with the adhesive compn., laminated the other oil-coated steel sheet, and cured at 180.degree. for 20 min to give a test specimen with tensile shear strength (5 mm/min) 269 kg/cm², vs. 173 when using natural rubber RSS 1 instead of I.

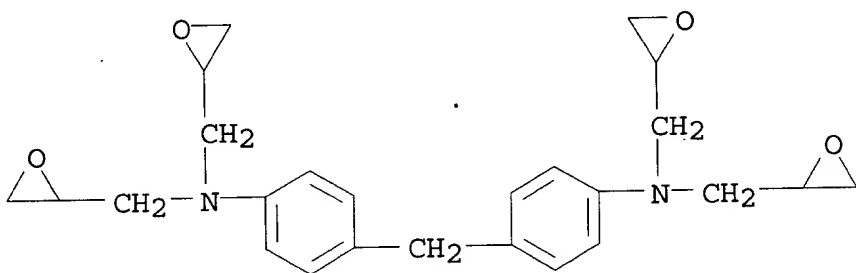
IT 120705-06-8
(adhesives, for oil-coated steel sheets)

RN 120705-06-8 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with
 N,N'-bis(2-methylphenyl)guanidine, 1,3-butadiene,
 (chloromethyl)oxirane, cyanoguanidine, N,N'-(methylenedi-4,1-
 phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine],
 4,4'-(1-methylethylidene)bis[phenol], 2-propenenitrile and
 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3

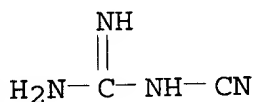
CMF C25 H30 N2 O4



CM 2

CRN 461-58-5

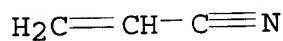
CMF C2 H4 N4



CM 3

CRN 107-13-1

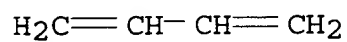
CMF C3 H3 N



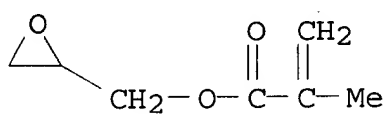
CM 4

CRN 106-99-0

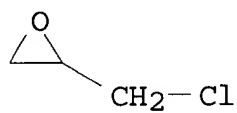
CMF C4 H6



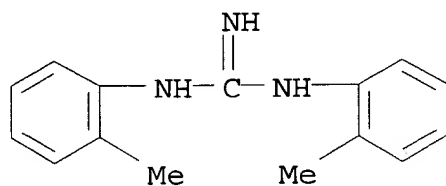
CM 5

CRN 106-91-2
CMF C7 H10 O3

CM 6

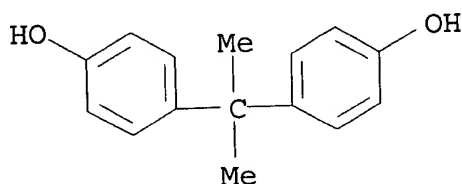
CRN 106-89-8
CMF C3 H5 Cl O

CM 7

CRN 97-39-2
CMF C15 H17 N3

CM 8

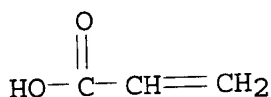
CRN 80-05-7
CMF C15 H16 O2



CM 9

CRN 79-10-7

CMF C3 H4 O2



IC ICM C09J003-12

ICS C09J003-16

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 39, 55

IT 122-60-1D, alkyl derivs., polymers with acrylic nitrile rubber and Epikote 828 and dicyandiamide 461-58-5D, Dicyandiamide, polymers with acrylic nitrile rubber and alkylphenol monoglycidyl ether and Epikote 828 25068-38-6D, Epikote 828, polymers with acrylic nitrile rubber and alkylphenol monoglycidyl ether and dicyandiamide 25265-19-4D, Acrylic acid-acrylonitrile-butadiene copolymer, polymers with alkylphenol monoglycidyl ether and Epikote 828 and dicyandiamide **120705-06-8**

(adhesives, for oil-coated steel sheets)

L40 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2003 ACS

1987:516735 Document No. 107:116735 The structure and properties of networks prepared from tetraepoxide and carboxyl-terminated polybutadienes. Ilavsky, M.; Hrouz, J.; Dusek, K.; Nedbal, J.; Vanek, P. (Inst. Macromol. Chem., Czech. Acad. Sci., Prague, 162 06, Czech.). Crosslinked Epoxies, Proc. Discuss. Conf., 9th, Meeting Date 1986, 347-56. Editor(s): Sedlacek, Blahoslav; Kahovec, Jaroslav. de Gruyter: Berlin, Fed. Rep. Ger. (English) 1987. CODEN: 56BCAG.

AB Measurements of the thermally stimulated depolarization and of the dynamic mech. and photoelastic behavior showed that networks made from the reactions of carboxy-terminated butadiene rubber and tetraepoxy-contg. nitrile rubber in the presence of Cr octanoate were homogeneous, with the exception of samples having the highest content of the tetraepoxy resin. The position of the main transition of the networks depended on the microstructure of the rubbers and was little affected by the resin content. The min. in

the equil. modulus and in the sol content were obsd. for the stoichiometric ratio of reactive groups.

IT 110339-77-0D, reaction products with carboxy-terminated butadiene rubber
(network structure and properties of)

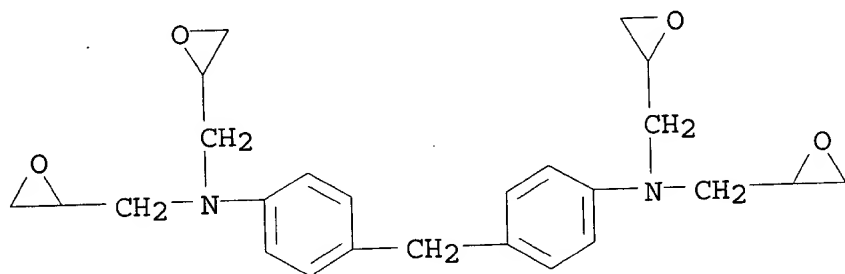
RN 110339-77-0 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3

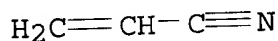
CMF C25 H30 N2 O4



CM 2

CRN 107-13-1

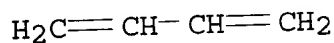
CMF C3 H3 N



CM 3

CRN 106-99-0

CMF C4 H6

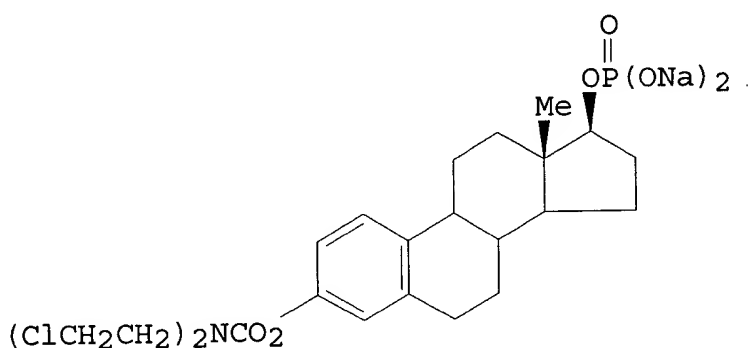


CC 39-12 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 37

IT 110339-77-0D, reaction products with carboxy-terminated butadiene rubber
(network structure and properties of)

L40 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2003 ACS
 1981:400896 Document No. 95:896 Studies on the distribution and
 metabolism of estramustine phosphate disodium (EMP). Sugiyama,
 Makoto; Tatewaki, Nobukiyo; Hayashi, Toshio; Sugihara, Katsuhiko
 (Res. Lab., Nippon Shinyaku Co., Ltd., Kyoto, Japan). Iyakuin
 Kenkyu, 11(4), 588-610 (Japanese) 1980. CODEN: IYKEDH. ISSN:
 0287-0894.

GI



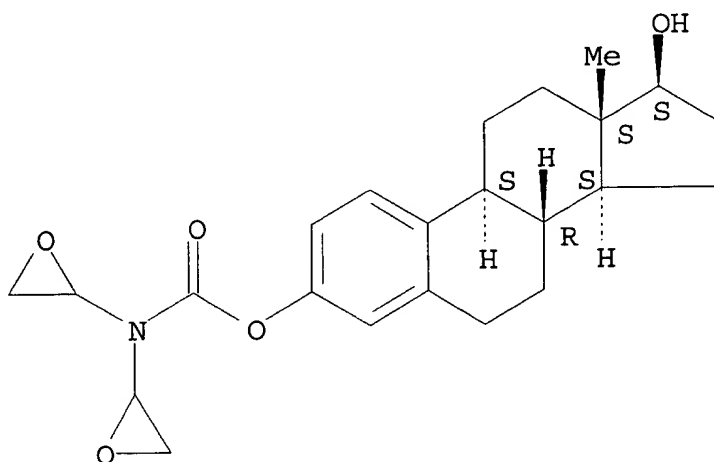
AB 3H-labeled or 14C-labeled estramustine phosphate disodium (I)
 [52205-73-9] was administered intragastrically, or i.v. to rats or
 dogs. The highest level of radioactivity was found in the liver,
 followed by the prostate, adrenal gland, kidney, spleen, blood
 plasma, testicle, and brain 24 h after treatment. A specific
 binding of I to the prostate was found. I levels in the prostate
 were 40-fold higher than those in blood plasma 48 h after treatment,
 indicating a slow metab. of I in the prostate.

IT 77816-03-6 77816-04-7
 (as estramustine metabolite)

RN 77816-03-6 HCAPLUS

CN Estra-1,3,5(10)-triene-3,17-diol (17.beta.)-, 3-
 [bis(oxiranyl)carbamate] (9CI) (CA INDEX NAME)

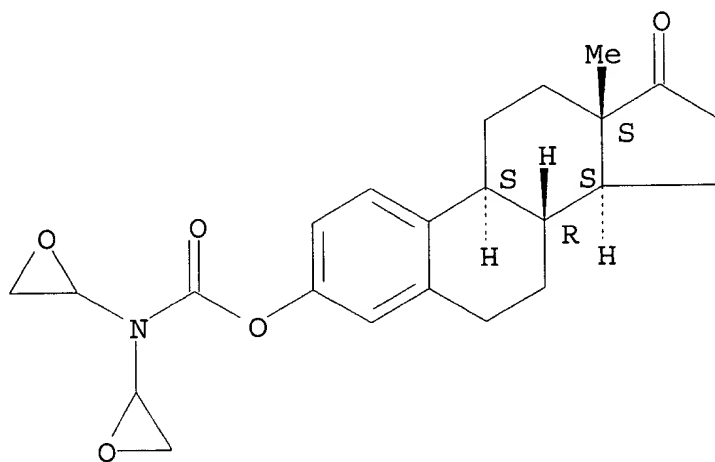
Absolute stereochemistry.



RN 77816-04-7 HCAPLUS

CN Estra-1,3,5(10)-trien-17-one, 3-[[[bis(oxiranyl)amino]carbonyl]oxy] -
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 2-2 (Hormone Pharmacology)

IT 2998-57-4 62899-40-5 77816-03-6 77816-04-7
(as estramustine metabolite)

L40 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2003 ACS

1972:15365 Document No. 76:15365 Crosslinked, water-containing epoxy polyadducts. Goebel, Wilhelm; Von Bonin, Wulf (Farbenfabriken Bayer A.-G.). Ger. DE 1495843 19710923, 7 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1964-F44369 19641104.

AB Solidified water-in-oil emulsions of polyamine-crosslinked epoxy resins are prepd. with polyalkoxylated polyester emulsifiers. Thus,

to a soln. of emulsifier (reaction product of carboxyl-terminated adipic acid-diethylene glycol polyester [9010-89-3] 4308, polyethylene glycol [25322-68-3] 862, and bisphenol A epoxy resin 431 parts) 12 and N,N''-(oxyditetramethylene)diethylenediamine [4067-18-9] 15 in oxydiethylene p-(2,3-epoxypropoxy)benzoate [33147-06-7] 100 parts is added 100 parts H₂O at 10.deg. to give a non-pourable paste which hardens to a light yellow solid contg. fine drops of emulsified H₂O.

IT 35097-88-2P 35097-89-3P

(manuf. of, emulsifiers in)

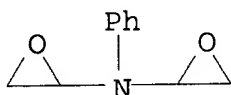
RN 35097-88-2 HCAPLUS

CN 3,6,9,12-Tetraazatetradecane-1,14-diamine, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] and N-oxiranyl-N-phenyloxiranamine (9CI) (CA INDEX NAME)

CM 1

CRN 46153-25-7

CMF C10 H11 N O2

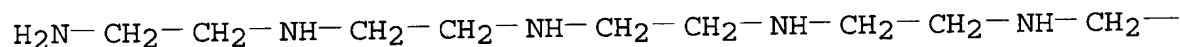


CM 2

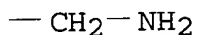
CRN 4067-16-7

CMF C10 H28 N6

PAGE 1-A



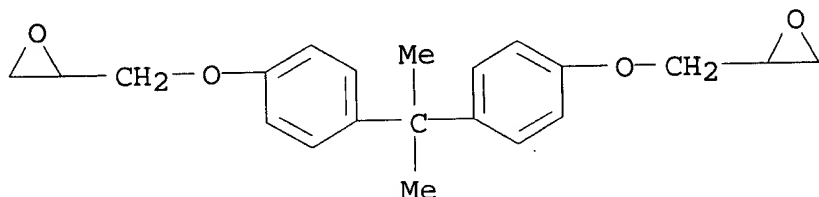
PAGE 1-B



CM 3

CRN 1675-54-3

CMF C21 H24 O4



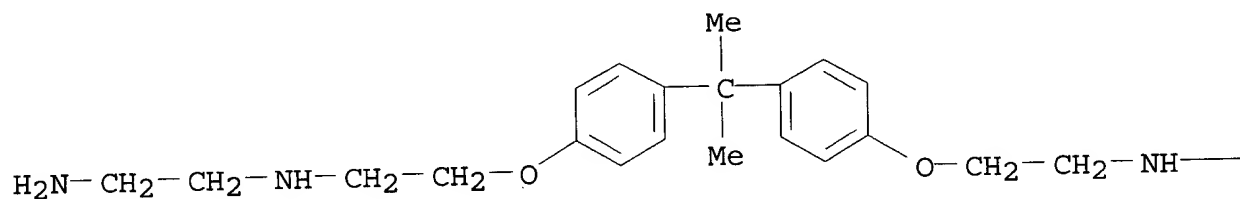
RN 35097-89-3 HCAPLUS
 CN 1,2-Ethanediamine, N,N'-[(1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl)]bis-, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] and N-oxiranyl-N-phenyloxiranamine (9CI) (CA INDEX NAME)

CM 1

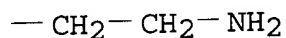
CRN 47612-95-3

CMF C23 H36 N4 O2

PAGE 1-A



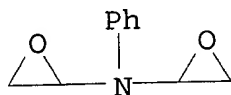
PAGE 1-B



CM 2

CRN 46153-25-7

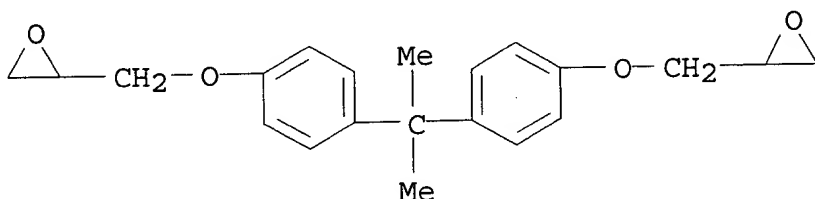
CMF C10 H11 N O2



CM 3

CRN 1675-54-3

CMF C21 H24 O4



IC C08G; C09D

CC 36 (Plastics Manufacture and Processing)

IT 35097-85-9P 35097-86-0P 35097-87-1P 35097-88-2P

35097-89-3P

(manuf. of, emulsifiers in)

L40 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2003 ACS

1965:52239 Document No. 62:52239 Original Reference No.

62:9283g-h, 9284a-b Dyeing of cuprammonium fibers graft copolymerized with glycidyl methacrylate. Nakahara, Yasuji Sen-i Gakkaishi, 20(5), 319-23 (Japanese) 1964.

AB Dyeing of cuprammonium fibers (I) graft copolymerized with glycidyl methacrylate (II) was studied, esp. for the substantive dye Congo red and the basic dye magenta. These 2 dyes contain amino groups in their mols. which can react with the epoxide of II. Magenta stains I-II as fast as reactive dyeing, but Congo red stains the fiber slower than reactive dyeing without a pyridine catalyst in the dyebath. The adsorbed magenta on I-II cannot be extd. by normal org. solvents (.omicron.-chlorophenol, HCONMe₂, etc.), while the Congo red adsorbed on I-II is extd. easily by these solvents. The dyeing properties of I-II for Congo red in the absence of catalyst are similar to those of normal substantive dyes; the higher the dyeing temp., the higher the dyeing velocity and the lower the max. exhaustion of dye. By addn. of pyridine as catalyst in the dyebath, the dyeing temp. affects only the dyeing rate, and the max. exhaustion of dye has the same value at each temp. in equil. Upon addn. of the catalyst, the rate of exhaustion of the dye Congo red by I-II apparently follows the 2nd-order reaction between the dye mols. and epoxides on the fiber. The activation energy of the reaction is large enough (.apprx.20 kcal.) to be considered a chem. reaction. Magenta absorbed on I-II has a different hue than that on wool, acrylic fiber, or cuprammonium fiber graft copolymerized with acrylonitrile (III), all dyed under the same conditions. A dye of this hue (like that of crystal violet) is synthesized by reaction of magenta and by reaction of magenta and II in EtOH at the b.p. with addn. of hydroquinone as an inhibitor for the polymerization reaction. This new dye has been named "Nobeoka Violet"; it has max.

absorption at 610 m.mu. in aq. soln. The dyed pieces of I-II with magenta and I-III with Nobeoka Violet are scarcely distinguishable from each other by the hue. It is assumed that Nobeoka Violet is synthesized on the fibers in dyeing of I -II by magenta. From Polymer Rept. 1964(74), 20-1.

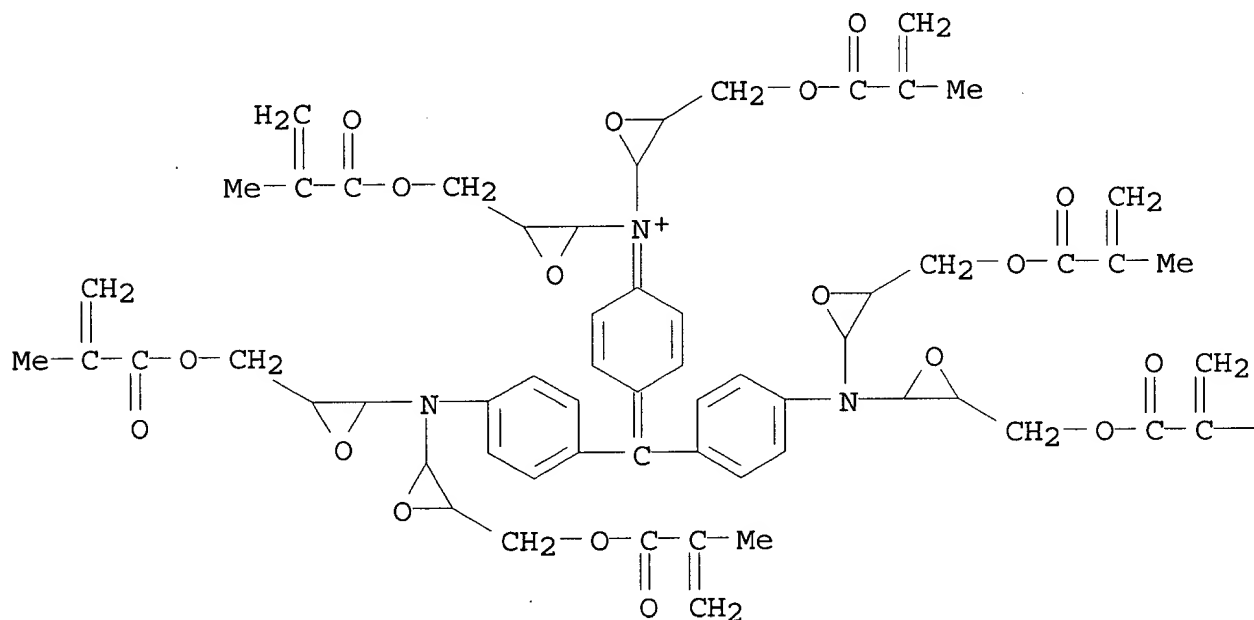
IT 10162-36-4, Nobeoka Violet

(dyeing cuprammonium rayon-glycidyl methacrylate graft fibers with)

RN 10162-36-4 HCAPLUS

CN Ammonium, [4-[4-[bis(1,2-epoxy-3-hydroxypropyl)amino]-.alpha.-[p-[bis(1,2-epoxy-3-hydroxypropyl)amino]phenyl]-3-methylbenzylidene]-2,5-cyclohexadien-1-ylidene]bis(1,2-epoxy-3-hydroxypropyl)-, chloride, hexamethacrylate (ester) (8CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

● Cl -

— Me

CC 47 (Textiles)
IT 10162-36-4, Nobeoka Violet
(dyeing cuprammonium rayon-glycidyl methacrylate graft fibers with)

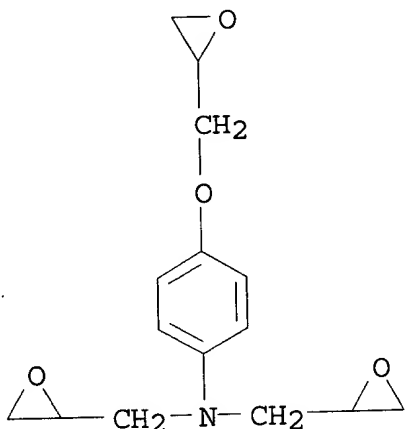
=> d 141 1-30 cbib abs hitstr hitind

L41 ANSWER 1 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2003:114121 Document No. 138:154871 Coupled **diene** polymers
modified with electrophilic groups. Gruen, Michael; Knauf, Thomas;
Braubach, Wilfried (Bayer Aktiengesellschaft, Germany). Eur. Pat.
Appl. EP 1283220 A1 20030212, 13 pp. DESIGNATED STATES: R: AT, BE,
CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT,
LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (German). CODEN:
EPXXDW. APPLICATION: EP 2002-16300 20020724. PRIORITY: DE
2001-10139304 20010806; DE 2002-10217800 20020422.

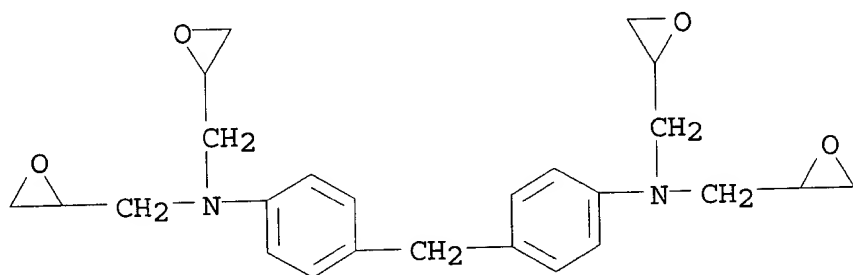
AB The title polymers, highly branched (star-formed) and with good
processability, are prepd. by coupling living polymers of
dienes, optionally with vinylarom. compds., and introducing
electrophilic groups; and have polydispersity 1.0-2.1, wt.-av. mol.
wt. (Mw) .gtoreq.50,000, glass temp. (Tg) -100.degree. to
-10.degree., and vinyl microstructure 5-90%. Polymg. 1125 g
butadiene with 375 g styrene in hexane in the presence of
tert-BuOCH₂CH₂OCH₂CH₃ 90, K tert-amylate 0.80, and BuLi 12 mmol at
70.degree. to complete conversion, adding 0.253 mol
4,4'-methylenebis(N,N-diglycidylaniline)/mol polymer, stirring at
70.degree. for .apprx.1 h, and stopping with EtOH gave a star
polymer with microstructure 1,4-cis 13.0, 1,4-trans 17.7, and vinyl
46.6%, styrene content 76%, Tg -22.degree., polydispersity 2.1, and
Mw 495,935.

IT 5026-74-4, N,N-Diglycidyl-4-(glycidyloxy)aniline
28768-32-3, 4,4'-Methylenebis(N,N-diglycidylaniline)
(coupling/branching agents for living **diene** polymers)

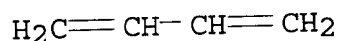
RN 5026-74-4 HCAPLUS
 CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-
 (9CI) (CA INDEX NAME)



RN 28768-32-3 HCAPLUS
 CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-
 (oxiranylmethyl)- (9CI) (CA INDEX NAME)



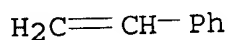
IT 9003-55-8P
 (of star configuration; coupled **diene** polymers modified
 with electrophilic groups)
 RN 9003-55-8 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



- (styrene-**butadiene** rubber, of star configuration; coupled **diene** polymers modified with electrophilic groups)
- IC ICM C08C019-44
- CC 39-4 (Synthetic Elastomers and Natural Rubber)
- ST coupling **diene** polymer branched; **butadiene** copolymer branched coupling; styrene copolymer branched coupling; glycidylaniline deriv branching agent **diene** polymer; living polymn **diene** polymer coupling; SBR coupled branched manuf
- IT Polymerization
(anionic, living; prepn. of coupled **diene** polymers by anionic living polymn.)
- IT **Tires**
(coupled **diene** polymers modified with electrophilic groups for use in **tires**)
- IT Styrene-**butadiene** rubber, preparation
(of star configuration; coupled **diene** polymers modified with electrophilic groups)
- IT Linking agents
(polyglycidyl compds.; coupling/branching agents for living **diene** polymers)
- IT **Alkadienes**
(polymers, of star configuration; coupled **diene** polymers modified with electrophilic groups)
- IT Aromatic compounds
Vinyl compounds, preparation
(vinyl arenes, copolymers with **dienes**, of star configuration; coupled **diene** polymers modified with electrophilic groups)
- IT 2451-62-9 3454-29-3, Trimethylolpropane triglycidyl ether
5026-74-4, N,N-Diglycidyl-4-(glycidyoxy)aniline
13236-02-7, Glycerol triglycidyl ether 28768-32-3,
4,4'-Methylenebis(N,N-diglycidylaniline) 36366-26-4,
Trimethylolethane triglycidyl ether
(coupling/branching agents for living **diene** polymers)
- IT 9003-55-8P
(of star configuration; coupled **diene** polymers modified with electrophilic groups)
- IT 9003-55-8P
(styrene-**butadiene** rubber, of star configuration; coupled **diene** polymers modified with electrophilic groups)

groups)

L41 ANSWER 2 OF 30 HCAPLUS COPYRIGHT 2003 ACS

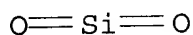
2002:944779 Document No. 138:25691 Manufacture of **silica**
 -compounded **rubber** compositions with good processability.
 Yamada, Haruo; Saito, Akira; Ishimura, Tokufusa (Asahi Kasei
 Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2002356583 A2
 20021213, 21 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 2001-372471 20011206. PRIORITY: JP 2001-87503 20010326.

AB Title compns., consisting of 100 parts **diene**
rubbers compatible to reinforcing **SiO₂**, 25-150
 parts reinforcing **SiO₂** fillers, 0.1-15 parts silane
 couplers, 1.0-20 parts **vulcanizing** agents and
 accelerators, are prep'd. by (A) kneading 70-100% of total
diene rubbers with 50-100% of total **SiO₂**
 and 0-10% (based on the **SiO₂** content in this step) silane
 couplers at discharge temp. 120-180.degree. for .gtoreq.1 time and
 cooling, (B) kneading the compns. from step A with the rest of
diene rubbers, **SiO₂**, and silane couplers
 at discharge temp. 120-180.degree. for .gtoreq.1 times and cooling,
 (C) kneading the compns. from step B with all the
vulcanizers at discharge temp. .ltoreq.120.degree. and
 cooling, and (D) **vulcanizing** at 130-200.degree.. Kneading
 137.5 parts oil-extended tetraglycidyl-1,3-bisaminomethylcyclohexane-
 modified SBR (contg. 37.5 parts extending oil) with 70 parts
SiO₂ at 160.degree. to form a mixt. (M1), kneading the M1
 with 7 parts Si 69 and other additives at 160.degree. to form a
 mixt. (M2), kneading the M2 with S and **vulcanizers** at
 90.degree., and **vulcanizing** at 160.degree. to form a test
 piece with tensile strength 21.2 MPa, 50.degree. tan.delta. (for
 fuel cost) 0.134, and 0.degree. tan (for wet-skid resistance) 0.805.

IT 7631-86-9, **Silica**, uses
 (multistep kneading for **SiO₂**-contg. **diene**
rubber compns. for **tire** treads with high mech.
 strength ad wet-skid resistance and low fuel cost)

RN 7631-86-9 HCAPLUS

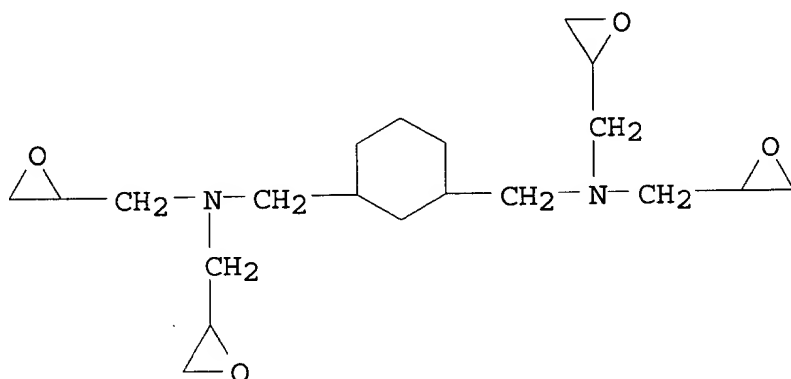
CN **Silica** (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 65992-66-7
 (reaction products with SBR; multistep kneading for **SiO₂**
 -contg. **diene rubber** compns. for **tire**
 treads with high mech. strength ad wet-skid resistance and low
 fuel cost)

RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
 (9CI) (CA INDEX NAME)



IT 9003-55-8P

(styrene-butadiene rubber, modified for compatibility to SiO₂; multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)

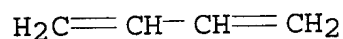
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

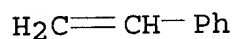
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



IC ICM C08L009-00

ICS B29B007-14; B29B007-90; B60C001-00; C08J003-24; C08K003-36;
C08K005-00; B29K009-00; B29K105-16

CC 39-13 (Synthetic Elastomers and Natural Rubber)

ST tire tread diene rubber silica

reinforcer multistep kneading process; mech strength tire
diene rubber silica multistep kneading;
wet skid resistance tire diene rubber
silica multistep kneading; fuel cost redn tire
diene rubber silica multistep kneading

- IT Styrene-butadiene rubber, preparation
(modified for compatibility to SiO₂; multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)
- IT Kneading
(multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)
- IT Tires
(treads; multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)
- IT 7631-86-9, Silica, uses
(multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)
- IT 2530-83-8, 3-Glycidoxypopyltrimethoxysilane 4814-91-9,
1,2-Dimethylimidazoline 65992-66-7
(reaction products with SBR; multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)
- IT 9003-55-8P
(styrene-butadiene rubber, modified for compatibility to SiO₂; multistep kneading for SiO₂-contg. diene rubber compns. for tire treads with high mech. strength ad wet-skid resistance and low fuel cost)

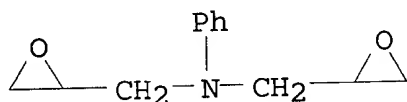
L41 ANSWER 3 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:889211 Document No. 137:371260 Silica-reinforced rubber compositions of improved processability and storage stability. Schaal, Stephane; Coran, Aubert Y.; Mowdood, Syed K. (Pirelli Pneumatici S.p.A., Italy). U.S. US 6482884 B1 20021119, 20 pp., Cont.-in-part of U.S. Ser. No. 514,641, abandoned. (English). CODEN: USXXAM. APPLICATION: US 2000-571503 20000515. PRIORITY: US 2000-514641 20000229.

AB The disclosure relates to a process for improving the processability, storage stability and/or cure rate of an uncured silica-reinforced rubber compn. where silica comprises the major filler in the reinforced rubber compn., which comprises combining a mixt. comprising rubber, silica and at least one org. compd. having a low mol. wt. and a functional group wherein said functional group is at least an epoxy group, such as an epoxy/ether, epoxy/hydroxyl, epoxy/ester, epoxy/amine, ether/amine, episulfide/ether, episulfide/hydroxyl, episulfide/ester functional group located in a terminal or sterically unhindered position in the mol. of said org. compd. where the mol. wt. of said org. compd. having a low mol. wt. is less than 7,000, or the org. compd. comprises an abietyl,

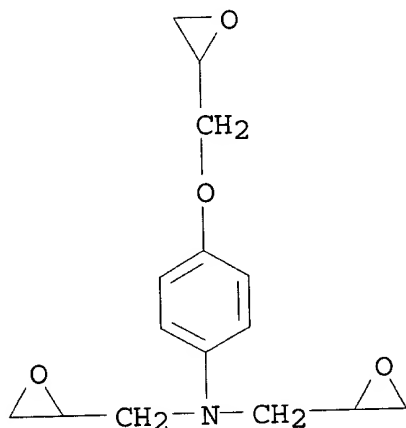
styrenated resorcinol formaldehyde, or ester hydroxyl org. compd. having a hydroxyl, ester, and optionally, an ether group, such as an ester diol. Thus, a compn. (A) contg. SBR 100, **silica** 60, X 50S (bis[3-(triethoxysilyl)propyl] tetrasulfide) 9.6, stearic acid 3, ZnO 2, 6PPD (N-1,3-dimethylbutyl-N'-p-phenylenediamine) 1.5, wax 1, arom. oil 12, N,N-diglycidylaniline (I) 2, S 1.2, N-cyclohexyl-2-benzothiazolesulfenamide 1.8 and DPG 80 (diphenylguanidine) 1.25 parts showed a substantial decrease in curing time compared to a control compn. lacking the I. The Mooney peak and the processability index of A are much lower than that of control compn. This indicates that the addn. of I to the control compn. leads to a significant improvement of the resistance to adverse rheol. changes that occur during storage. It can also be seen that I is much more effective than low mol. wt. glycols such as diethylene glycol di-Et ether or diethylene glycol Et ether acetate for processability after storage.

IT 2095-06-9, N,N-Diglycidylaniline 5026-74-4,
N,N-Diglycidyl-4-glycidyoxyaniline
(additives for **silica** reinforced **rubber**
compns. of improved processability and storage stability)

RN 2095-06-9 HCAPLUS
CN Oxiranemethanamine, N-(oxiranylmethyl)-N-phenyl- (9CI) (CA INDEX NAME)



RN 5026-74-4 HCAPLUS
CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-
(9CI) (CA INDEX NAME)

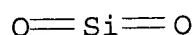


IT 7631-86-9, **Silica**, uses

(reinforcement filler; additives for **silica** reinforced **rubber** compns. of improved processability and storage stability)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9003-55-8

(styrene-butadiene rubber, additives for **silica** reinforced **rubber** compns. of improved processability and storage stability)

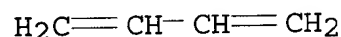
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

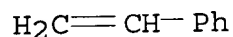
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



IC ICM C08K003-36

ICS C08K009-06

NCL 524492000

CC 39-9 (Synthetic Elastomers and Natural Rubber)

ST epoxy diglycidylaniline storage stability improver **silica** reinforced **rubber** compn

IT Stabilizing agents

Vulcanization accelerators and agents

(additives for **silica** reinforced **rubber** compns. of improved processability and storage stability)

IT Styrene-butadiene rubber, properties

(additives for **silica** reinforced **rubber** compns. of improved processability and storage stability)

IT Fatty acids, uses

(dimer acids, diglycidyl ester; additives for **silica** reinforced **rubber** compns. of improved processability)

- and storage stability)
- IT Natural **rubber**, uses
Soybean oil
(epoxidized; additives for **silica** reinforced
rubber compns. of improved processability and storage
stability)
- IT 111-46-6, Diethylene glycol, uses 1446-61-3, Dehydroabietylamine
2095-06-9, N,N-Diglycidylaniline 2211-94-1, Glycidyl
4-methoxyphenyl ether 2386-87-0, 3,4-Epoxy cyclohexylmethyl
3,4-epoxycyclohexanecarboxylate 2425-79-8, 1,4-Butanediol
diglycidyl ether 2461-15-6, 2-Ethylhexyl glycidyl ether
2461-40-7, Glycidyl butyrate 3146-39-2, exo-2,3-Epoxy norbornane
4016-14-2, Isopropyl glycidyl ether 4436-24-2,
(2,3-Epoxypropyl)benzene 5026-74-4, N,N-Diglycidyl-4-
glycidyl oxyaniline 5455-98-1, N-(2,3-Epoxypropyl)phthalimide
5493-45-8, Diglycidyl 1,2-cyclohexane dicarboxylate 25068-38-6D,
Bisphenol A-epichlorohydrin copolymer, glycidyl-end-capped
26142-30-3, Polypropylene glycol diglycidyl ether 26447-14-3,
Cresyl glycidyl ether 26761-45-5, Glycidyl neodecanoate
37231-63-3, Polyrad 0515A 85721-25-1, 1,2-Epoxy-9-decene
97052-23-8, Formaldehyde-glycidyl phenyl ether copolymer
175205-96-6, Exx-RD 85 359013-45-9, Penacolite CRL 411
(additives for **silica** reinforced **rubber**
compns. of improved processability and storage stability)
- IT 7631-86-9, **Silica**, uses
(reinforcement filler; additives for **silica** reinforced
rubber compns. of improved processability and storage
stability)
- IT 9003-55-8
(styrene-butadiene **rubber**, additives for
silica reinforced **rubber** compns. of improved
processability and storage stability)
- L41 ANSWER 4 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:747860 Document No. 137:264253 Modified conjugated **diene**
polymer compositions for **tire** treads. Yamada, Haruo;
Saito, Akira; Kubo, Nobuaki (Asahi Kasei Corporation, Japan). Jpn.
Kokai Tokkyo Koho JP 2002284934 A2 20021003, 12 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2001-87224 20010326.
- AB Title compns., with good processability, contain (A) 100 parts
modified conjugated **diene** (CD) **rubber** or
CD-styrene **rubber** polymers having wt.-av. mol. wt. (Mw) of
100,000-2,000,000 and polydispersity (Mw/Mn) of 1.05-3.0 and contg.
.gtoreq.60% modified components (MD) by reacting with .gtoreq.2
epoxy group-contg. polyfunctional compds. at epoxy group/living
rubber polymer of >1 equiv and .ltoreq.10 equiv, (B) 25-100
parts SiO₂, and (C) 1.0-20 parts **vulcanizers**. A
kneaded compn. contg. tetraglycidyl-1,3-bis(aminomethylcyclohexane)-
modified SBR (contg. 35% styrene, with MD 83%, Mw 446,000, Mw/Mn
1.55) 100, carbon black 5, and SiO₂ 65 part showed
130.degree. Mooney viscosity of 41 and was mixed with 1.4 parts S
and 3.7 parts **vulcanization** accelerators and pressed to

form a test piece with 300% modulus 9.8 MPa, 50.degree. tan.delta. 0.121 (for low fuel cost), and 0.degree. tan.delta. (for wet-skid resistance) 0.925.

IT 9003-17-2P
(butadiene rubber, epoxy-terminated;
tetraglycidyl bisaminomethylcyclohexane-modified diene
rubber or SBR for tire treads with low fuel
cost and high grip ability)

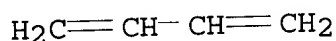
RN 9003-17-2 HCAPLUS

CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6



IT 9003-55-8P
(styrene-butadiene rubber, epoxidized;
tetraglycidyl bisaminomethylcyclohexane-modified diene
rubber or SBR for tire treads with low fuel
cost and high grip ability)

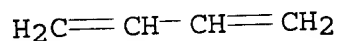
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

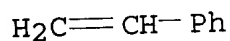
CMF C4 H6



CM 2

CRN 100-42-5

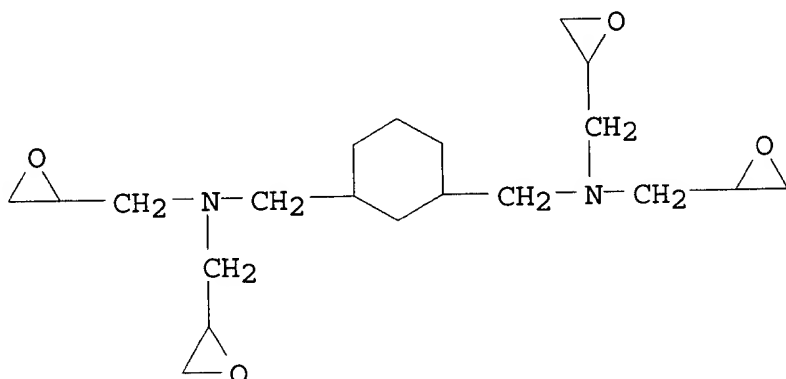
CMF C8 H8



IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane)
(tetraglycidyl bisaminomethylcyclohexane-modified diene
rubber or SBR for tire treads with low fuel
cost and high grip ability)

RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl) -
(9CI) (CA INDEX NAME)



- IC ICM C08L015-00
ICS C08G059-14; C08G059-28; C08K003-04; C08K003-36; C08K005-541
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
- ST tetraglycidyl bisaminomethylcyclohexane modified **diene rubber tire** tread; SBR tetraglycidyl bisaminomethylcyclohexane modified **tire** tread
- IT Styrene-**butadiene rubber**, preparation (epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)
- IT **Butadiene rubber**, preparation (epoxy-terminated; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)
- IT **Tires** (treads; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)
- IT 9003-17-2P (butadiene rubber, epoxy-terminated; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)
- IT 9003-55-8P (styrene-**butadiene rubber**, epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)
- IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane) (tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR for **tire** treads with low fuel cost and high grip ability)

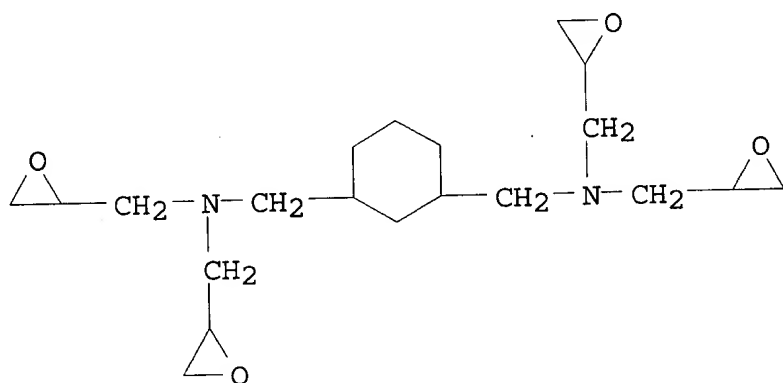
2002:747859 Document No. 137:264252 Modified conjugated **diene** polymer compositions and **rubber** compositions for **tire** treads. Yamada, Haruo; Saito, Akira; Kubo, Nobuaki; Matsuda, Takaaki (Asahi Kasei Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2002284933 A2 20021003, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-87223 20010326.

AB Title polymer compns., having a wt.-av. mol. wt. (Mw) of 100,000-2,000,000, consist of (A1) epoxy-modified conjugated **diene** (CD) polymers prepd. by polymg. CD or CD and arom. vinyl compds. in the presence of org. Li compds. in hydrocarbon solvents, then reacting with .gtoreq.2 epoxy group-contg. functional compds. and (A2) modified polymers prepd. from living A1 polymers and reactive functional group-contg. modifiers. A kneaded compn. contg. tetraglycidyl-1,3-bis(aminomethylcyclohexane)-modified SBR (35% styrene, with Mw 683,000) 70, dimethylimidazoline-modified SBR (35% styrene, with Mw 563,000) 330, carbon black 5, **SiO₂** 65, Si 69 3, and S 1.4 part was **vulcanized** to form a test piece with tensile strength 21.3 MPa, 50.degree. tan.delta. 0.135 (for low fuel cost), and 0.degree. tan.delta. (for wet-skid resistance) 0.93.

IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane) (epoxidized **diene rubber** and other functional compd.-modified **diene rubber** blend for **tire** treads)

RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl) - (9CI) (CA INDEX NAME)



IT 9003-55-8P

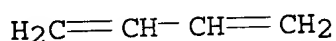
(styrene-**butadiene rubber**, epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** blend **tire** treads with low fuel cost and high grip ability)

RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

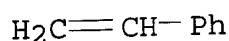
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



- IC ICM C08L015-00
ICS C08F008-08; C08F008-30; C08F008-42; C08K003-36; C08K005-00;
C08L091-00
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
- ST tetraglycidyl bisaminomethylcyclohexane modified **diene rubber blend tire tread**; SBR tetraglycidyl bisaminomethylcyclohexane modified blend **tire tread**
- IT Silanes
(alkoxy, **diene rubber** modified with;
epoxidized **diene rubber** and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT Amines, reactions
(amino aldehydes, (thio), **diene rubber**
modified with; epoxidized **diene rubber** and
other functional compd.-modified **diene rubber**
blend for **tire treads**)
- IT Aldehydes, reactions
Ketones, reactions
(amino, (thio), **diene rubber** modified with;
epoxidized **diene rubber** and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT Polysiloxanes, reactions
(di-Me, ethoxy- or methoxy-contg., **diene rubber**
modified with; epoxidized **diene rubber** and
other functional compd.-modified **diene rubber**
blend for **tire treads**)
- IT Synthetic **rubber**, preparation
(**diene**, epoxy-terminated; epoxidized **diene rubber** and other functional compd.-modified **diene rubber** blend for **tire treads**)
- IT Styrene-**butadiene rubber**, preparation
(epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified

- diene rubber blend tire treads with low fuel cost and high grip ability)**
- IT Amines, reactions
(keto, (thio), **diene rubber** modified with;
epoxidized **diene rubber** and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT Heterocyclic compounds
(nitrogen, **diene rubber** modified with;
epoxidized **diene rubber** and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT Polymer blends
(tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** blend **tire treads** with low fuel cost and high grip ability)
- IT **Tires**
(treads; epoxidized **diene rubber** and other functional compd.-modified **diene rubber** blend for **tire treads**)
- IT 90-93-7, 4,4'-Bis(diethylamino)benzophenone 101-68-8,
4,4'-Diphenylmethanediisocyanate 681-84-5, Tetramethoxysilane
2530-83-8, 3-Glycidoxypropyltrimethoxysilane 7646-78-8, Tin
tetrachloride, reactions 28299-33-4D, Imidazoline, di-Me derivs.
(**diene rubber** modified with; epoxidized
diene rubber and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane)
(epoxidized **diene rubber** and other functional
compd.-modified **diene rubber** blend for
tire treads)
- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized;
tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** blend **tire treads** with low fuel cost and high grip ability)

L41 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2003 ACS

2002:747858 Document No. 137:264260 **Rubber** compositions for vibration dampers. Matsuda, Takaaki; Yamada, Haruo (Asahi Kasei Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2002284932 A2 20021003, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-86880 20010326.

AB Title compns., with good sound insulation and heat resistance, contain (A) 100 parts **rubber** blends consisting of 20-80% natural and/or polyisoprene (contg. .gtoreq.90% of cis-configuration units) **rubber** and 20-80% conjugated **diene** (CD) **rubber** and/or CD-styrene **rubber** polymers having wt.-av. mol. wt. (Mw) of 100,000-2,000,000 and polydispersity (Mw/Mn) of 1.05-3.0 and contg. .gtoreq.60% modified components (MD) prepd. by reacting with .gtoreq.2 epoxy group-contg. polyfunctional

comps, (B) 25-100 parts **SiO₂** and/or carbon black, and (C) 0.5-3.0 parts **vulcanizers**. A compn. contg. tetraglycidyl-1,3-bis(aminomethylcyclohexane)-modified SBR (contg. 12% styrene, with MD 70%, Mw 538,000, Mw/Mn 2.33) 30, RSS 1 70, **SiO₂** 40, and S 1.4 part was **vulcanized** to form a test piece with 300% modulus 51 kg/cm², tan.delta. at 15 Hz 0.095, dynamic multiple factor 1.53, compression set 28 (100.degree., 70 h), and good heat aging resistance (120.degree., 100 h).

IT 9003-55-8P

(styrene-butadiene rubber, epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR and natural (isoprene) **rubber** blends for vibration dampers)

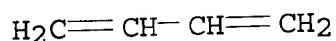
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

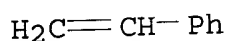
CMF C4 H6



CM 2

CRN 100-42-5

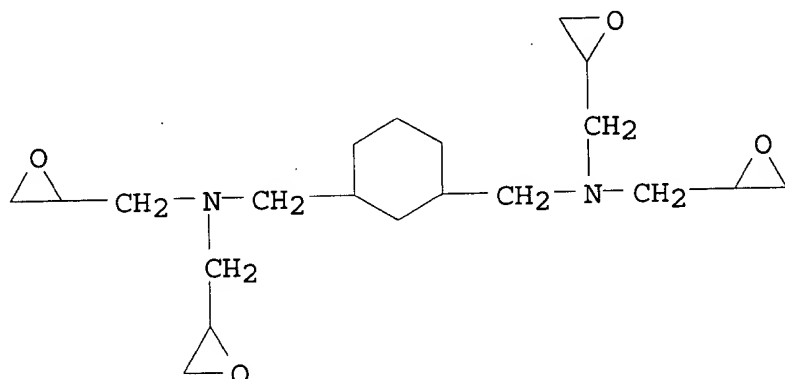
CMF C8 H8



IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane) (tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** or SBR and natural (isoprene) **rubber** blends for vibration dampers)

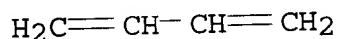
RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)- (9CI) (CA INDEX NAME)



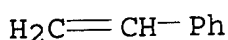
- IC ICM C08L015-00
ICS C08G081-02; C08K003-04; C08K003-36; C08L007-00; C08L009-00;
C08L009-06
- CC 39-15 (Synthetic Elastomers and Natural Rubber)
- ST tetraglycidyl bisaminomethylcyclohexane modified SBR natural
rubber blend vibration damper
- IT Natural **rubber**, uses
(RSS 1; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber or SBR and natural (isoprene)
rubber blends for vibration dampers)
- IT Synthetic **rubber**, preparation
(**diene**, epoxy-terminated; tetraglycidyl
bisaminomethylcyclohexane-modified **diene rubber**
or SBR and natural (isoprene) **rubber** blends for
vibration dampers)
- IT Styrene-**butadiene rubber**, preparation
(epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber or SBR and natural (isoprene)
rubber blends for vibration dampers)
- IT Isoprene **rubber**, uses
(of cis-1,4-configuration; tetraglycidyl
bisaminomethylcyclohexane-modified **diene rubber**
or SBR and natural (isoprene) **rubber** blends for
vibration dampers)
- IT Heat-resistant materials
Sound insulators
Vibration dampers
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber or SBR and natural (isoprene) **rubber**
blends for vibration dampers)
- IT Polymer blends
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber or SBR and natural (isoprene) **rubber**
blends for vibration dampers)
- IT 9003-31-0
(isoprene **rubber**, of cis-1,4-configuration;
tetraglycidyl bisaminomethylcyclohexane-modified **diene**

- rubber** or SBR and natural (isoprene) **rubber** blends for vibration dampers)
- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized;
tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber or SBR and natural (isoprene) **rubber**
blends for vibration dampers)
- IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane)
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber or SBR and natural (isoprene) **rubber**
blends for vibration dampers)
- L41 ANSWER 7 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:747857 Document No. 137:264259 Modified **diene**
rubber compositions for footwears. Matsuda, Takaaki;
Yamada, Haruo (Asahi Kasei Corporation, Japan). Jpn. Kokai Tokkyo
Koho JP 2002284931 A2 20021003, 9 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2001-86879 20010326.
- AB Title compns., with abrasion and wet-skid resistance, contain 5-150
parts fillers and 100 parts conjugated **diene** (CD)
rubber and/or CD-styrene **rubber** polymers having
wt.-av. mol. wt. (Mw) of 100,000-2,000,000 and polydispersity
(Mw/Mn) of 1.05-3.0 and contg. .gtoreq.60% modified components (MD)
prepd. by reacting with .gtoreq.2 epoxy group-contg. polyfunctional
compds. A compn. contg. tetraglycidyl-1,3-
bis(aminomethylcyclohexane)-modified SBR (contg. 35% styrene, with
MD 70%, Mw 538,000, Mw/Mn 2.33) 100, SiO₂ 60, and S 1.4
part was **vulcanized** to form a test piece with 300% modulus
12.1 MPa, tensile strength 21.8 MPa, 0.degree. tan.delta. (for
wet-skid resistance) 0.894, and abrasion resistance index 111%.
- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized;
tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber compns. with high wear and wet-skid resistance for
shoe outsoles)
- RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
- CM 1
- CRN 106-99-0
CMF C4 H6

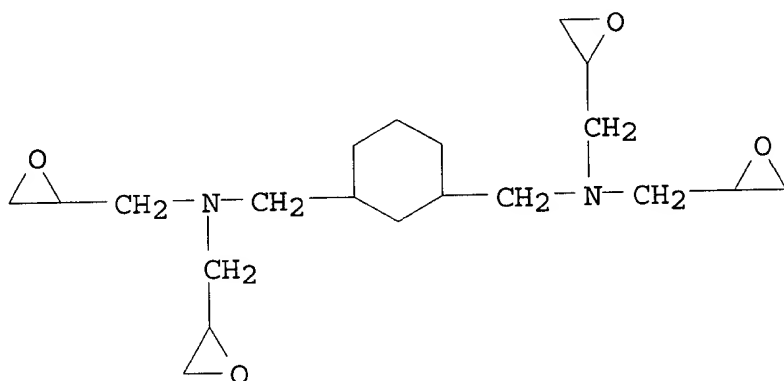


CM 2

CRN 100-42-5
CMF C8 H8

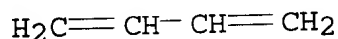


- IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane)
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber compns. with high wear and wet-skid resistance for
shoe outsoles)
- RN 65992-66-7 HCAPLUS
- CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)



- IC ICM C08L015-00
ICS C08F008-00; C08K003-00; A43B013-04
- CC 39-15 (Synthetic Elastomers and Natural Rubber)
- ST tetraglycidyl bisaminomethylcyclohexane modified **diene**
rubber footwear; shoe outsole tetraglycidyl
bisaminomethylcyclohexane modified SBR
- IT Synthetic **rubber**, preparation
(**diene**, epoxy-terminated; tetraglycidyl
bisaminomethylcyclohexane-modified **diene rubber**
compns. with high wear and wet-skid resistance for shoe outsoles)
- IT Styrene-**butadiene rubber**, preparation
(epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber compns. with high wear and
wet-skid resistance for shoe outsoles)
- IT Shoes
(outsoles; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber compns. with high wear and
wet-skid resistance for shoe outsoles)
- IT Abrasion-resistant materials
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber compns. with high wear and wet-skid resistance for
shoe outsoles)
- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized;

- tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** compns. with high wear and wet-skid resistance for shoe outsoles)
- IT 65992-66-7, Tetra-N-glycidyl-1,3-bis(aminomethylcyclohexane) (tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** compns. with high wear and wet-skid resistance for shoe outsoles)
- L41 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:747856 Document No. 137:264251 Modified conjugated **diene** polymer compositions for **tire** treads. Yamada, Haruo; Saito, Akira; Matsuda, Takaaki (Asahi Kasei Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2002284930 A2 20021003, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-84589 20010323.
- AB Title compns. contain mixts. of (A1) modified conjugated **diene** (CD) polymers having wt.-av. mol. wt. (Mw) of 100,000-2,000,000 and polydispersity (Mw/Mn) of 1.05-3.0 and prepd. by polymg. CD in the presence of org. Li compds. in hydrocarbon solvents, then reacting with .gtoreq.2 epoxy group-contg. polyfunctional compds. to form polymers contg. .gtoreq.60% modified degree (MD) and (A2) modified arom. vinyl compd. (AV)-CD copolymers having Mw and Mw/Mn as described in A1 and prepd. as described in A1 with AV and CD as monomers. A compn. contg. tetraglycidyl-1,3-bis(aminomethylcyclohexane) (I)-modified **butadiene rubber** (with MD 83%, Mw 390,000, Mw/Mn 1.26) 20, I-modified SBR (35% styrene, with MD 78%, Mw 713,000, Mw/Mn 1.95) 80, carbon black 5, SiO₂ 65, Si 69 6, and S 1.4 part was **vulcanized** to form a test piece with 300% modulus 11.0 MPa, tensile strength 21.0 MPa, 50.degree. tan.delta. 0.140 (for low fuel cost), and 0.degree. tan.delta. (for wet-skid resistance) 0.355.
- IT 9003-17-2P
(**butadiene rubber**, epoxy-terminated; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** blend **tire** treads with low fuel cost and high grip ability)
- RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 106-99-0
CMF C4 H6

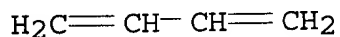


- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified **diene rubber** blend **tire** treads with low fuel cost and high grip ability)

RN 9003-55-8 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

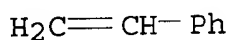
CM 1

CRN 106-99-0
 CMF C4 H6



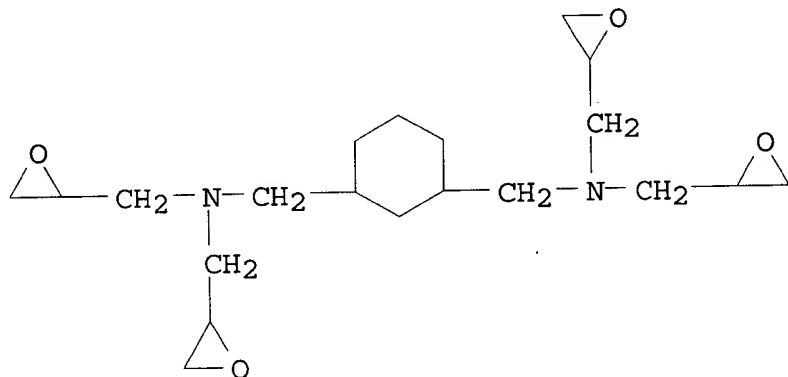
CM 2

CRN 100-42-5
 CMF C8 H8



IT 65992-66-7
 (tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber blend **tire** treads with low fuel cost and
 high grip ability)

RN 65992-66-7 HCAPLUS
 CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
 (9CI) (CA INDEX NAME)



IC ICM C08L009-06
 ICS B60C001-00; C08F004-48; C08F008-08; C08G081-00; C08K003-36;
 C08K005-00; C08L063-08; C08L009-06; C08L091-00
 CC 39-13 (Synthetic Elastomers and Natural Rubber)
 ST tetraglycidyl bisaminomethylcyclohexane modified **diene**
rubber blend **tire** tread; SBR tetraglycidyl
 bisaminomethylcyclohexane modified blend **tire** tread

- IT Styrene-**butadiene rubber**, preparation
(epoxidized; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber blend tire treads with
low fuel cost and high grip ability)
- IT **Butadiene rubber**, preparation
(epoxy-terminated; tetraglycidyl bisaminomethylcyclohexane-
modified **diene rubber blend tire**
treads with low fuel cost and high grip ability)
- IT Polymer blends
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber blend tire treads with low fuel cost and
high grip ability)
- IT **Tires**
(treads; tetraglycidyl bisaminomethylcyclohexane-modified
diene rubber blend tire treads with
low fuel cost and high grip ability)
- IT 9003-17-2P
(**butadiene rubber**, epoxy-terminated;
tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber blend tire treads with low fuel cost and
high grip ability)
- IT 9003-55-8P
(styrene-**butadiene rubber**, epoxidized;
tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber blend tire treads with low fuel cost and
high grip ability)
- IT 65992-66-7
(tetraglycidyl bisaminomethylcyclohexane-modified **diene**
rubber blend tire treads with low fuel cost and
high grip ability)

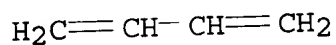
L41 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:747765 Document No. 137:264232 Production method of modified
conjugate **diene** polymer. Yamada, Haruo; Matsuda, Takaaki;
Kitagawa, Yuichi (Asahi Kasei Corporation, Japan). Jpn. Kokai
Tokkyo Koho JP 2002284814 A2 20021003, 13 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 2001-88368 20010326.

- AB The titled polymer was prepd. by copolymn. of **diene**
monomer and arom. vinyl monomers with organolithium catalyst and the
living terminals were further modified by reaction with functional
compd. such as tetraglycidyl-1,3-bisaminomethyl-cyclohexane or
.gamma.-glycidoxypropyltrimethoxysilane. The polymn. gave
diene polymer product with low impurity (acetylene and
allenes) and the product is useful for manuf. **tires**.
- IT 9003-17-2DP, 1,3-**Butadiene** homopolymer, reaction
product with .gamma.-glycidoxypropyltrimethoxysilane
9003-55-8DP, 1,3-**Butadiene**-styrene copolymer,
reaction product with tetraglycidyl-1,3-bisaminomethyl-cyclohexane
65992-66-7DP, Tetra-N-glycidyl-1,3-
bisaminomethylcyclohexane, reaction product with 1,3-
butadiene-styrene copolymer
(prepn. of modified conjugate **diene** polymer)

RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

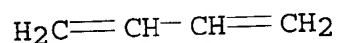
CRN 106-99-0
CMF C4 H6



RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

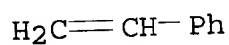
CM 1

CRN 106-99-0
CMF C4 H6

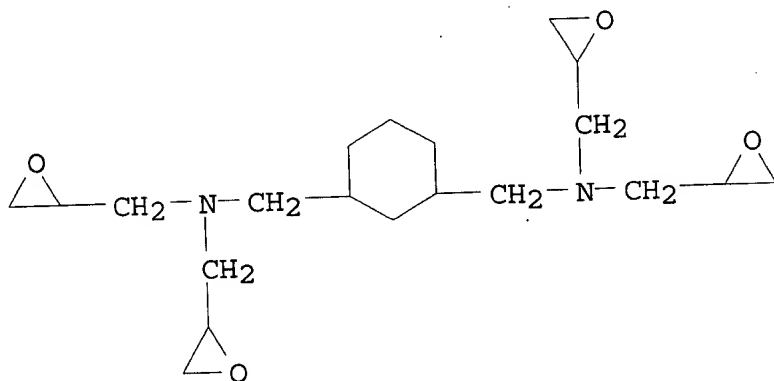


CM 2

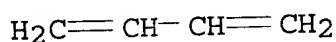
CRN 100-42-5
CMF C8 H8



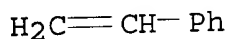
RN 65992-66-7 HCAPLUS
CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)



IT 9003-55-8P
 (styrene-**butadiene** rubber, prepn. of modified conjugate
diene polymer)
 RN 9003-55-8 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6



CM 2
 CRN 100-42-5
 CMF C8 H8



IC ICM C08F008-00
 ICS C08F004-48; C08F036-04; C08F212-02
 CC 39-4 (Synthetic Elastomers and Natural Rubber)
 Section cross-reference(s): 35
 ST **diene** polymer modification glycidoxypropyltrimethoxysilane
 ; **tire diene** polymer modification tetraglycidyl
 bisaminomethylcyclohexane
 IT Synthetic rubber, preparation
 (**diene**; prepn. of modified conjugate **diene**
 polymer)
 IT Epoxides
 Silanes
 (prepn. of conjugate **diene** polymer modified with
 tetraglycidyl-1,3-bisaminomethyl-cyclohexane or
 .gamma.-glycidoxypropyltrimethoxysilane)
 IT Styrene-**butadiene** rubber, preparation
 (prepn. of modified conjugate **diene** polymer)
 IT **Tires**
 (prepn. of modified conjugate **diene** polymer for
tires)
 IT 2530-83-8DP, .gamma.-Glycidoxypropyltrimethoxysilane, reaction
 product with 1,3-**butadiene** homopolymer 9003-17-2DP
 , 1,3-**Butadiene** homopolymer, reaction product with
 .gamma.-glycidoxypropyltrimethoxysilane 9003-55-8DP, 1,3-
Butadiene-styrene copolymer, reaction product with
 tetraglycidyl-1,3-bisaminomethyl-cyclohexane 65992-66-7DP,

Tetra-N-glycidyl-1,3-bisaminomethylcyclohexane, reaction product
with 1,3-**butadiene**-styrene copolymer
(prepn. of modified conjugate **diene** polymer)

IT 9003-55-8P
(styrene-**butadiene** rubber, prepn. of modified conjugate
diene polymer)

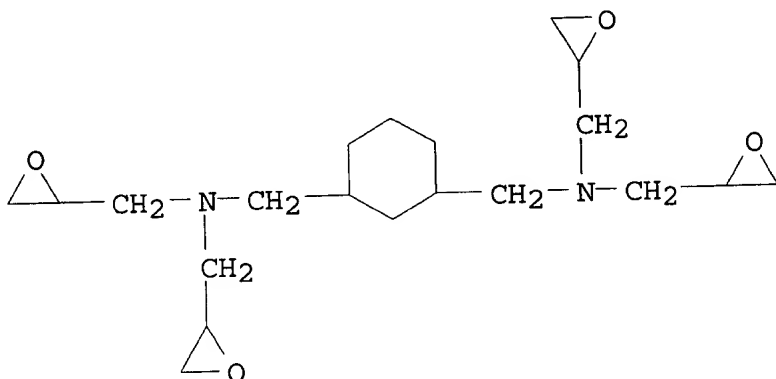
L41 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2003 ACS

2002:637715 Document No. 137:170859 Modified **rubbers**, their
manufacture and uses. Fusamae, Hiroshi; Toda, Keiichi (Japan
Elastomer Co., Ltd., Japan). PCT Int. Appl. WO 2002064636 A1
20020822, 38 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ,
BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,
EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY,
DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT,
SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO
2002-JP1252 20020214. PRIORITY: JP 2001-38386 20010215.

AB Title **rubbers** have a structure as (R-Q)_nX [R = conjugated
diene (CD) polymer or their arom. vinyl compd. (AV) random
copolymer contg. .ltoreq.50% AV; Q = AV polymer block or AV polymer
block-contg. AV-CD copolymer with R/Q of 30-97:3-70; n .gtoreq.1
integer; X = .gtoreq.2 epoxy-contg. compd. residue] and contain
total AV content (A1) of 5-60%, AV block content (A2) of 3-40%, CD
in vinyl configuration (A3) of .ltoreq.80 mol%, and modifier-coupled
components with mol. wt. (MW) of 105 to 1,500,000. A
tetraglycidyl-1,3-bisaminomethylcyclohexane-modified block SBR
showing A1 24.9%, A2 15.3%, A3 14 mol%, R/Q of 80:20, and MW 582,000
was kneaded with 40 phr **SiO2**, 1.7 phr S, additives and
vulcanizers and pressed at 160.degree. for 20 min to form a
sheet with Shore A hardness 71, compression set (25%, 70.degree., 22
h) 21%, and 10% strain tan.delta. 0.140, 0.109, and 0.125 at
0.degree., 50.degree., and 70.degree., resp.

IT 65992-66-7
(block SBR modifiers; manuf. of polyepoxide-modified block SBR
with sp. properties for vibration dampers or shoes)

RN 65992-66-7 HCAPLUS
CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)

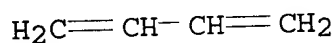


IT 9003-17-2
 (butadiene rubber, manuf. of
 polyepoxide-modified block SBR with sp. properties for vibration
 dampers or shoes)

RN 9003-17-2 HCAPLUS
 CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
 CMF C4 H6

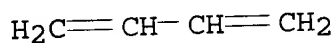


IT 106107-54-4P
 (styrene-butadiene rubber, block, modified;
 manuf. of polyepoxide-modified block SBR with sp. properties for
 vibration dampers or shoes)

RN 106107-54-4 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene, block (9CI) (CA
 INDEX NAME)

CM 1

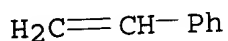
CRN 106-99-0
 CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



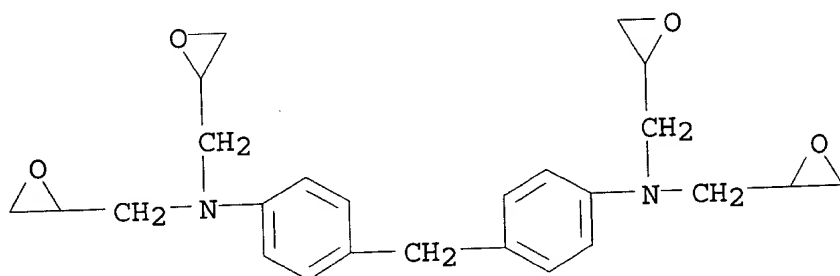
- IC ICM C08C019-22
ICS C08L053-02; C08K003-36
- CC 39-4 (Synthetic Elastomers and Natural Rubber)
- IT Styrene-**butadiene rubber**, preparation
(block, modified; manuf. of polyepoxide-modified block SBR with
sp. properties for vibration dampers or shoes)
- IT **Butadiene rubber**, uses
Isoprene **rubber**, uses
Natural **rubber**, uses
(manuf. of polyepoxide-modified block SBR with sp. properties for
vibration dampers or shoes)
- IT 1675-54-3, Bisphenol A diglycidyl ether 2095-03-6, Bisphenol F
diglycidyl ether **65992-66-7**
(block SBR modifiers; manuf. of polyepoxide-modified block SBR
with sp. properties for vibration dampers or shoes)
- IT 9003-17-2
(**butadiene rubber**, manuf. of
polyepoxide-modified block SBR with sp. properties for vibration
dampers or shoes)
- IT 9003-31-0
(isoprene **rubber**, manuf. of polyepoxide-modified block
SBR with sp. properties for vibration dampers or shoes)
- IT 106107-54-4P
(styrene-**butadiene rubber**, block, modified;
manuf. of polyepoxide-modified block SBR with sp. properties for
vibration dampers or shoes)
- L41 ANSWER 11 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2002:364079 Document No. 136:387377 Polyester yarn with sequentially
coated reactive finishes, process for making the yarn, and a rubber
composite employing the yarn. Anderson, Norman S.; Sherriff,
Stephan F. (Arteva Technologies S.A.R.L., Switz.). Eur. Pat. Appl.
EP 1205593 A1 20020515, 26 pp. DESIGNATED STATES: R: AT, BE, CH,
DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV,
FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP
2001-125439 20011102. PRIORITY: US 2000-708330 20001108.
- AB A polyester yarn coated with a first coating of a reaction product
of a halohydroxy org. compd. and a salt of a weak acid is coated
with a second coating over the first coating of an epoxy resin
having at least two epoxide groups, the resin being present in an
amt. in the range from 0.001-1.0% of the yarn. The epoxy coated
yarn is then twisted into cord, dipped in a resorcinol
formaldehyde-latex (RFL), cured and embedded in rubber (which is
heated), resulting in excellent adhesion of the cord to the rubber.
- IT 31305-94-9, Araldite MY 721
(polyester yarn with sequentially coated reactive finishes,

process for making the yarn, and a rubber composite employing the yarn)

RN 31305-94-9 HCAPLUS
CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3
CMF C25 H30 N2 O4

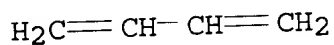


IT 9003-17-2D, **Polybutadiene**, polyepoxide
(polyester yarn with sequentially coated reactive finishes,
process for making the yarn, and a rubber composite employing the yarn)

RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6



IC ICM D06M015-55
ICS D06M013-148
CC 40-9 (Textiles and Fibers)
Section cross-reference(s): 39
ST epoxy coated polyester yarn **tire** cord
IT Coating materials

Tires

(polyester yarn with sequentially coated reactive finishes,
process for making the yarn, and a rubber composite employing the yarn)

IT 31305-94-9, Araldite MY 721 71228-86-9, Denacol EX-622
246039-57-6, Araldite EPN 9880CH 425615-22-1, Araldite ECN 9499
(polyester yarn with sequentially coated reactive finishes,

process for making the yarn, and a rubber composite employing the yarn)

IT 56-81-5D, Glycerol, reaction products with epichlorohydrin
 106-89-8D, Epichlorohydrin, reaction products with hydroxy compds.
 107-21-1D, Ethylene glycol, reaction products with epichlorohydrin
 127-08-2, Potassium acetate 327-62-8, Potassium propionate
 584-08-7, Potassium carbonate 9003-17-2D,
Polybutadiene, polyepoxide 16761-12-9, Potassium
 heptanoate 32555-29-6, Glycerol glycidyl ether 43224-82-4
 74911-53-8 118549-88-5, Polyglycerol glycidyl ether
 (polyester yarn with sequentially coated reactive finishes,
 process for making the yarn, and a rubber composite employing the
 yarn)

L41 ANSWER 12 OF 30 HCAPLUS COPYRIGHT 2003 ACS
 2001:661512 Document No. 135:228056 **Silica** reinforced
rubber compositions comprising epoxy group-containing
 compounds for improved processability and storage stability.
 Schaal, Stephane; Coran, Aubert Y.; Mowdood, Syed K. (Pirelli
 Pneumatici S.p.A., Italy). PCT Int. Appl. WO 2001064782 A1
 20010907, 76 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ,
 BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,
 EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
 KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
 MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
 TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ,
 TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR,
 GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.
 (English). CODEN: PIXXD2. APPLICATION: WO 2001-US6326 20010228.
 PRIORITY: US 2000-514641 20000229; US 2000-571503 20000515.

AB The disclosure relates to a process for improving the
 processability, storage stability and/or cure rate of an uncured
silica reinforced **rubber** compn. where
silica comprises the major filler in the reinforced
rubber compn., which comprises combining a mixt. comprising,
rubber, **silica** and at least one org. compd. having
 a low mol. wt. and a functional group wherein said functional group
 is at least an epoxy group, such as an epoxy/ether, epoxy/hydroxyl,
 epoxy/ester, epoxy/amine, ether/amine, episulfide, episulfide/ether,
 episulfide/hydroxyl, episulfide/ester functional group located in a
 terminal or sterically unhindered position in the mol. of said org.
 compd. where the mol. wt. of said org. compd. having a low mol. wt.
 is less than 7,000. Thus, a compn. comprising soln. SBR 10,
silica 60, TESPT X50S 9.6, stearic acid 3, zinc oxide 2,
 6PPD 1.5, wax 1, arom. oil 12, and N,N-diglycidylaniline 2 parts was
vulcanized with a curing system (comprising sulfur 1.2, CBS
 1.8, and diphenylguanidine, DPG 80, 1.25 parts), and showed cure
 time 52 min, elongation 342.2, stress at break 18.42 MPa, Mooney
 peak 69.5 kPa, and processability index 0.58, compared to 65,
 356.25, 19.53, 119.0, and 1.0, resp., for a similar compn. without
 N,N-diglycidylaniline.

IT 2095-06-9, N,N-Diglycidylaniline 5026-74-4,

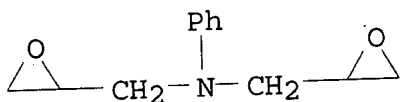
N,N-Diglycidyl-4-glycidyoxyaniline 7631-86-9,

Silica, uses

(silica reinforced rubber compns. comprising epoxy group-contg. compds. for improved processability and storage stability)

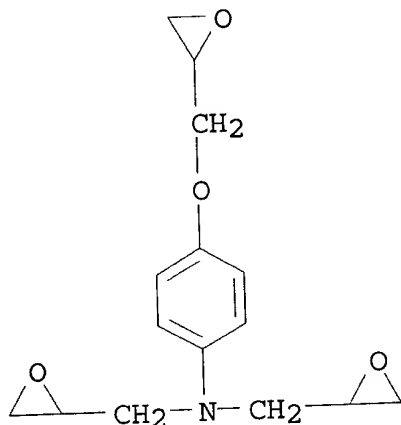
RN 2095-06-9 HCAPLUS

CN Oxiranemethanamine, N-(oxiranylmethyl)-N-phenyl- (9CI) (CA INDEX NAME)



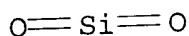
RN 5026-74-4 HCAPLUS

CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)- (9CI) (CA INDEX NAME)



RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9003-55-8

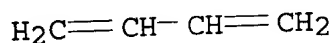
(styrene-butadiene rubber, silica reinforced rubber compns. comprising epoxy group-contg. compds. for improved processability and storage stability)

RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

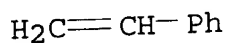
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8

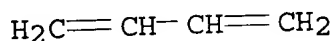


- IC ICM C08L021-00
- ICS C08K005-15; C08K005-45; B60C001-00
- CC 39-9 (Synthetic Elastomers and Natural Rubber)
- ST **rubber** processing curing enhancer epoxy group contg compd;
silica filled **rubber** compn epoxy org modifier
- IT Fatty acids, uses
(dimer acids, diglycidyl esters; **silica** reinforced
rubber compns. comprising epoxy group-contg. compds. for
improved processability and storage stability)
- IT Castor oil
(glycidyl ether deriv.; **silica** reinforced
rubber compns. comprising epoxy group-contg. compds. for
improved processability and storage stability)
- IT Silanes
(organosilanes; **silica** reinforced **rubber**
compns. comprising epoxy group-contg. compds. for improved
processability and storage stability)
- IT Coupling agents
(**silica** reinforced **rubber** compns. comprising
epoxy group-contg. compds. for improved processability and
storage stability)
- IT Epoxy resins, uses
(**silica** reinforced **rubber** compns. comprising
epoxy group-contg. compds. for improved processability and
storage stability)
- IT Styrene-**butadiene rubber**, uses
(**silica** reinforced **rubber** compns. comprising
epoxy group-contg. compds. for improved processability and
storage stability)
- IT 40372-72-3, Bis(3-triethoxysilylpropyl) tetrasulfide
(coupling agent; **silica** reinforced **rubber**
compns. comprising epoxy group-contg. compds. for improved
processability and storage stability)
- IT 122-60-1, Phenyl glycidyl ether 2095-06-9,
N,N-Diglycidylaniline 2211-94-1, Glycidyl 4-methoxyphenyl ether

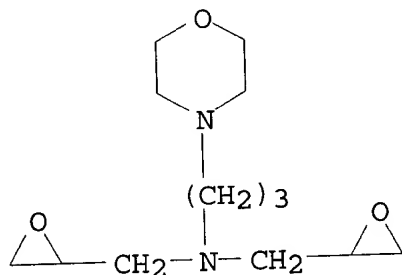
- 2386-87-0, 3,4-Epoxy cyclohexylmethyl-3,4-epoxycyclohexanecarboxylate
 2425-79-8, 1,4-Butanediol diglycidyl ether 2426-08-6, Butyl
 glycidyl ether 2461-15-6, 2-Ethylhexyl glycidyl ether 2461-40-7,
 Glycidyl butyrate 3146-39-2, exo-2,3-Epoxy norbornane 4016-14-2,
 Isopropyl glycidyl ether 4436-24-2, (2,3-Epoxypropyl)benzene
 5026-74-4, N,N-Diglycidyl-4-glycidyl oxyaniline 5455-98-1,
 (2,3-Epoxypropyl)phthalimide 5493-45-8, Diglycidyl-1,2-
 Cyclohexanedicarboxylate 7631-86-9, **Silica**, uses
 17557-23-2, Neopentyl glycol diglycidyl ether 25068-38-6D,
 Bisphenol A-epichlorohydrin copolymer, glycidyl 4-methoxyphenyl
 ethers 26142-30-3, Polypropylene glycol diglycidyl ether
 26447-14-3, Cresyl glycidyl ether 26761-45-5, Glycidyl
 neodecanoate 29756-57-8, Nonylphenyl glycidyl ether 79347-31-2,
 Cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate 85721-25-1,
 1,2-Epoxy-9-decene 97052-23-8, Formaldehyde-phenylglycidyl ether
 copolymer 359013-45-9, Penacolate CRL 411
 (silica reinforced **rubber** compns. comprising
 epoxy group-contg. compds. for improved processability and
 storage stability)
 IT 3101-60-8, p-tert-Butylphenyl glycidyl ether
 (silica reinforced **rubber** compns. comprising
 epoxy group-contg. compds. for improved processability and
 storage stability)
 IT 9003-55-8
 (styrene-butadiene **rubber**, **silica**
 reinforced **rubber** compns. comprising epoxy group-contg.
 compds. for improved processability and storage stability)

- L41 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2003 ACS
 2001:347117 Document No. 134:341510 Modified conjugated **diene**
 polymers, and rubber compositions and pneumatic **tires**
 using them. Omura, Tetsuya; Morita, Koichi (Bridgestone Corp.,
 Japan). Jpn. Kokai Tokkyo Koho JP 2001131227 A2 20010515, 12 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-310233 19991029.
 AB N-contg. heterocyclic groups are bonded to org. groups having
 2-hydroxy-1,3-propylene groups in conjugated **diene**
 polymers [AN[CH₂CH(OH)CH₂D]]nCH₂CH(OH)CH₂D (A = C1-3 alkylene; D =
 conjugated **diene** polymer; n = 0, 1) via .gtoreq.1 N
 group(s) in the heterocycles. Thus, a mixt. contg.
 1-benzyl-4-glycidylpiperazine-modified 1,3-butadiene
 rubber, natural rubber, Seast KH (C black), and vulcanizers was
 vulcanized to give a test piece showing low fuel-consumption
 property and good abrasion resistance.
 IT 9003-17-2P
 (butadiene rubber, reaction products with
 glycidyl-contg. heterocyclic compds.; N-contg. heterocyclic
 group-modified conjugated **diene** rubbers with low
 fuel-consumption property for **tire** treads)
 RN 9003-17-2 HCAPLUS
 CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

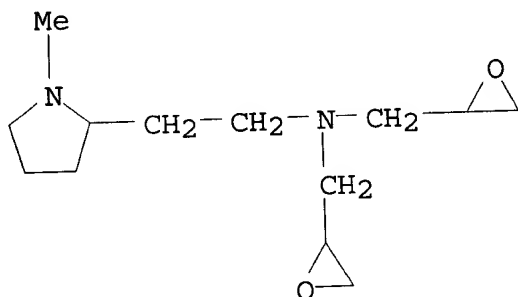
CRN 106-99-0
CMF C4 H6



IT 338410-84-7DP, reaction products with **butadiene**
polymers 338410-86-9DP, reaction products with
butadiene polymers
(rubber; N-contg. heterocyclic group-modified conjugated
diene rubbers with low fuel-consumption property for
tire treads)
RN 338410-84-7 HCAPLUS
CN 4-Morpholinepropanamine, N,N-bis(oxiranylmethyl)- (9CI) (CA INDEX
NAME)



RN 338410-86-9 HCAPLUS
CN 2-Pyrrolidineethanamine, 1-methyl-N,N-bis(oxiranylmethyl)- (9CI)
(CA INDEX NAME)



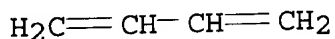
IT 9003-55-8P
(styrene-**butadiene** rubber, reaction products with
glycidyl-contg. heterocyclic compds.; N-contg. heterocyclic
group-modified conjugated **diene** rubbers with low
fuel-consumption property for **tire** treads)

RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

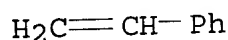
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



- IC ICM C08F008-30
ICS B60C001-00; C08F036-04; C08K003-04; C08K003-36; C08L015-00
CC 39-13 (Synthetic Elastomers and Natural Rubber)
ST nitrogen heterocycle modified conjugated **diene** rubber
tire; tread **tire butadiene** rubber
nitrogen heterocycle modified; abrasion resistance rubber nitrogen
heterocycle modified; piperazine modified conjugated **diene**
rubber **tire** tread; morpholine modified conjugated
diene rubber **tire** tread; pyrrolidine modified
conjugated **diene** rubber **tire** tread
IT Abrasion-resistant materials
(N-contg. heterocyclic group-modified conjugated **diene**
rubbers with low fuel-consumption property for **tire**
treads)
IT **Butadiene** rubber, preparation
Styrene-**butadiene** rubber, preparation
(reaction products with glycidyl-contg. heterocyclic compds.;
N-contg. heterocyclic group-modified conjugated **diene**
rubbers with low fuel-consumption property for **tire**
treads)
IT **Tires**
(treads; N-contg. heterocyclic group-modified conjugated
diene rubbers with low fuel-consumption property for
tire treads)
IT 9003-17-2P
(**butadiene** rubber, reaction products with
glycidyl-contg. heterocyclic compds.; N-contg. heterocyclic
group-modified conjugated **diene** rubbers with low
fuel-consumption property for **tire** treads)
IT 4122-79-6DP, 1-Glycidyl-4-methylpiperazine, reaction products with

butadiene polymers 72566-27-9DP, 1-Glycidyl-4-phenylpiperazine, reaction products with **butadiene** polymers 335165-57-6DP, 1-Benzyl-4-glycidylpiperazine, reaction products with **butadiene** polymers 338410-78-9DP, 1-Glycidyl-4-methylhomopiperazine, reaction products with **butadiene** polymers 338410-80-3DP, reaction products with **butadiene** polymers 338410-82-5DP, reaction products with **butadiene** polymers 338410-84-7DP, reaction products with **butadiene** polymers 338410-86-9DP, reaction products with **butadiene** polymers (rubber; N-contg. heterocyclic group-modified conjugated **diene** rubbers with low fuel-consumption property for **tire** treads)

IT 9003-55-8P (styrene-**butadiene** rubber, reaction products with glycidyl-contg. heterocyclic compds.; N-contg. heterocyclic group-modified conjugated **diene** rubbers with low fuel-consumption property for **tire** treads)

L41 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2001:247411 Document No. 134:267553 Conjugated-**diene**-styrene-based **rubber** composition. Nakafutami, Yasunobu; Saito, Akira; Yamada, Haruo; Kubo, Nobuaki (Asahi Kasei Kabushiki Kaisha, Japan; Nakafutami, Hiromi; Nakafutami, Sakiho; Nakafutami, Takekazu). PCT Int. Appl. WO 2001023467 A1 20010405, 60 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP6600 20000926. PRIORITY: JP 1999-272070 19990927; JP 1999-272090 19990927.

AB Title compn. with good processability, improved balance between low rolling resistance and wet skid resistance, and mech. strength comprises (A) **rubbery** conjugated-**diene** polymer or **rubbery** conjugated-**diene**/styrene copolymer 100, wherein >60 wt% thereof is modified by reacting active ends of the **rubbery** polymer with >2 epoxy group-contg. polyfunctional compd., the mol. wt. distribution Mw/Mn of the polymer is 1.05-3.0, and the wt.-av. mol. wt. of the polymer is 100,000-2,000,000; (B) **rubber** extender oil 1-100; (C) reinforcing **silica** 25-100, and (D) **vulcanizing** agent and **vulcanizing** accelerator 1.0-20 parts. Thus a compn. comprising tetraglycidyl-1,3-bisaminomethylcyclohexane-modified styrene-**butadiene** **rubber** 100, Sonix X 140 20, **silica** 50, Seast KH 5, Si 69 5, N-cyclohexyl-2-benzothiazylsulfeneamide 1.7, diphenylguanidine 2, and other additives was prepd., showing viscosity (130.degree.) 62, tensile strength 17.5 MPa, Tan.delta. at 50.degree. 0.147, and Tan.delta. at 0.degree. 0.802.

IT 9003-17-2 (butadiene **rubber**, of cis-1,4-configuration; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)

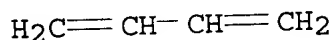
RN 9003-17-2 HCAPLUS

CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6

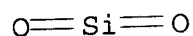


(butadiene rubber, prepn. and properties of
conjugated-diene-styrene rubber compn.)

IT 7631-86-9, Silica, uses
(filler; prepn. and properties of conjugated-diene
-styrene rubber compn.)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9003-17-2D, Polybutadiene, epoxidized, reaction
products with butadiene-styrene copolymer
9003-55-8D, 1,3-Butadiene-styrene copolymer,
reaction products with epoxy compds. 65992-66-7D, reaction
products with butadiene-styrene copolymer
(rubber; prepn. and properties of conjugated-
diene-styrene rubber compn.)

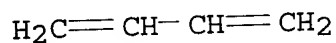
RN 9003-17-2 HCAPLUS

CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6



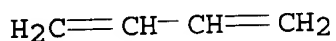
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

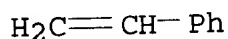
CMF C4 H6



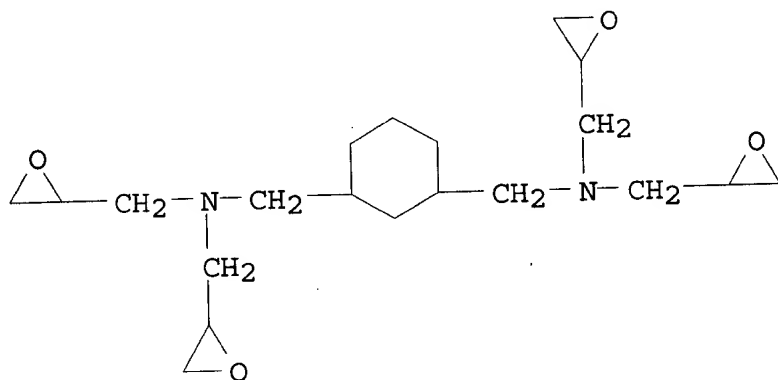
CM 2

CRN 100-42-5

CMF C8 H8



RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)

IT 9003-55-8

(styrene-butadiene rubber, SBR 1500, Asaprene
1204, Tufdene 3335; prepn. and properties of conjugated-
diene-styrene rubber compn.)

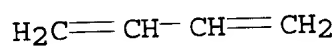
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

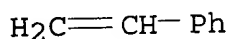
CRN 106-99-0

CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



- IC ICM C08L009-00
ICS C08L091-00; C08K003-36; C08K003-34
- CC 39-9 (Synthetic Elastomers and Natural Rubber)
- ST styrene **diene** copolymer **rubber** compn; extender
oil styrene **diene** copolymer **rubber** compn;
silica filler styrene **diene** copolymer
rubber compn; **vulcanizing** agent styrene
diene copolymer **rubber** compn; epoxy compd styrene
diene copolymer **rubber** compn
- IT Natural **rubber**, properties
(RSS 1; prepn. and properties of conjugated-**diene**
-styrene **rubber** compn.)
- IT Styrene-**butadiene rubber**, properties
(SBR 1500, Asaprene 1204, Tufdene 3335; prepn. and properties of
conjugated-**diene**-styrene **rubber** compn.)
- IT Carbon black, uses
(Seast KH, compn. contg.; prepn. and properties of conjugated-
diene-styrene **rubber** compn.)
- IT Coupling agents
Fillers
Vulcanization accelerators and agents
(compn. contg.; prepn. and properties of conjugated-**diene**
-styrene **rubber** compn.)
- IT Silanes
(coupling agent, compn. contg.; prepn. and properties of
conjugated-**diene**-styrene **rubber** compn.)
- IT Hydrocarbon oils
(extender oil, Sonic Process Oil X 140; prepn. and properties of
conjugated-**diene**-styrene **rubber** compn.)
- IT **Butadiene rubber**, properties
(of cis-1,4-configuration; prepn. and properties of conjugated-
diene-styrene **rubber** compn.)
- IT Liquids
(oils, compn. contg.; prepn. and properties of conjugated-
diene-styrene **rubber** compn.)
- IT **Butadiene rubber**, properties
(prepn. and properties of conjugated-**diene**-styrene
rubber compn.)
- IT 9003-17-2
(**butadiene rubber**, of cis-1,4-configuration;
prepn. and properties of conjugated-**diene**-styrene
rubber compn.)
- IT 9003-17-2
(**butadiene rubber**, prepn. and properties of
conjugated-**diene**-styrene **rubber** compn.)

- IT 40372-72-3, Si 69
(compn. contg.; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)
- IT 7631-86-9, Silica, uses
(filler; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)
- IT 7646-78-8D, Tin tetrachloride, reaction products with **butadiene**-styrene copolymer 9003-17-2D, **Polybutadiene**, epoxidized, reaction products with **butadiene**-styrene copolymer 9003-55-8D, 1,3-**Butadiene**-styrene copolymer, reaction products with epoxy compds. 10026-04-7D, Tetrachlorosilane, reaction products with **butadiene**-styrene copolymer 65992-66-7D, reaction products with **butadiene**-styrene copolymer (rubber; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)
- IT 9003-55-8
(styrene-**butadiene rubber**, SBR 1500, Asaprene 1204, Tufdene 3335; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)
- IT 95-33-0, N-Cyclohexyl-2-benzothiazylsulfenamide 102-06-7, Diphenylguanidine
(vulcanizing agent; prepn. and properties of conjugated-**diene**-styrene **rubber** compn.)

L41 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2000:830189 Document No. 134:5817 Surface-treated inorganic fillers for **rubbers** or resins. Sato, Seiji (Chugoku Gomu Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000327947 A2 20001128, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-142909 19990524.

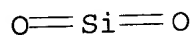
AB Title fillers are inorg. fillers treated with 5-100% (preferably, based on 100 parts fillers) tertiary amino N-contg. tetra-functional epoxy oligomers (e.g., condensates of m-xylylene diamine and epichlorohydrin) at preferable temp. of 50-200.degree.. A natural **rubber** compn. contg. 1.5 phr S and 25 phr Tetrad X-treated SiO₂ (5:20 Tetrad X and SiO₂, at 150.degree. for 40 min) was **vulcanized** at 150.degree. over 10 min to form a product showing low plasticization and high mech. strength and abrasion resistance.

IT 7631-86-9, Silica, uses 64020-73-1, Tetrad X

(Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



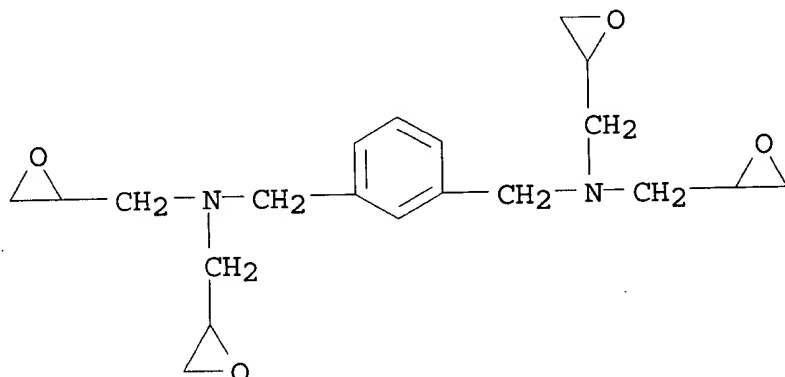
RN 64020-73-1 HCAPLUS

CN 1,3-Benzenedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 63738-22-7

CMF C20 H28 N2 O4



IT 9003-18-3
(nitrile rubber, Tetrad X-treated inorg fillers for rubbers for high abrasion resistance and fast vulcanization and for epoxy resins for flexibility)

RN 9003-18-3 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

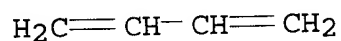
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



IC ICM C09C003-10

ICS C08G059-10

CC 39-9 (Synthetic Elastomers and Natural Rubber)

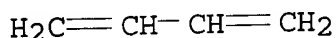
- Section cross-reference(s): 38
- ST abrasion resistance fast **vulcanization rubber**
Tetrad treated inorg filler; epoxy resin flexibility Tetrad treated inorg filler
- IT Abrasion-resistant materials
Fillers
(Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)
- IT Epoxy resins, uses
Natural **rubber**, uses
Nitrile **rubber**, uses
(Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)
- IT **Vulcanization**
(fast; Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)
- IT 7631-86-9, Silica, uses 64020-73-1,
Tetrad X
(Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)
- IT 9003-18-3
(nitrile **rubber**, Tetrad X-treated inorg fillers for **rubbers** for high abrasion resistance and fast **vulcanization** and for epoxy resins for flexibility)
- L41 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2003 ACS
2000:608814 Document No. 133:194469 Prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue. Kondo, Haruhiko; Manabe, Takao; Kishi, Hajime (Toray Industries, Inc., Japan). PCT Int. Appl. WO 2000050495 A1 20000831, 42 pp. DESIGNATED STATES: W: KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP7333 19991227. PRIORITY: JP 1999-42868 19990222; JP 1999-276327 19990929.
- AB The reinforced rubber materials useful for hose, belt, **tire**, etc., comprise (A) as prepregs, carbon fibers which have been impregnated with a liq. rubber having viscosity at 70.degree. of 0.01-100 Pa.cntdot.s and contg. substantially no solvents, and (B) as matrix, the same rubber, and are obtained by crosslinking the liq. rubber in the prepreg. Thus, kneading Poly bd-R 45HT (OH-terminated **butadiene** rubber) 100 with Coronate 2512 (isocyanate) 18 and S-Lec BM-S (polyvinyl butyrals) 5 parts gave a liq. rubber with viscosity at 70.degree. of 0.05 Pa.cntdot.s, which was coated on a release paper to pickup wt. of 52 g/m2, sandwiched on 2 sides of a carbon fiber fabric (190 g/m2), and hot pressed to give a prepreg. A laminate of 30 plies of the prepreg had excellent flexural fatigue resistance.

IT 9003-17-2
 (butadiene rubber, hydroxy-terminated, Poly bd-R 45HT; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

RN 9003-17-2 HCAPLUS
 CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
 CMF C4 H6



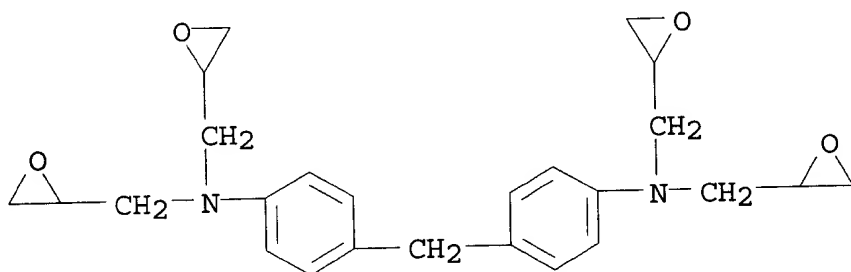
(butadiene rubber, of cis-1,4-configuration, Nipol BR 1220; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

IT 31305-94-9, Sumiepoxy ELM 434
 (crosslinking agents; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

RN 31305-94-9 HCAPLUS
 CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)]

CM 1

CRN 28768-32-3
 CMF C25 H30 N2 O4



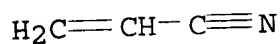
IT 9003-18-3
 (nitrile rubber, carboxy-contg., Nipol DN 601; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

RN 9003-18-3 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

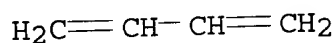
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



(nitrile rubber, carboxy-terminated, CTBN 1300; preregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue
(nitrile rubber, preregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue

IT 9003-55-8

(styrene-**butadiene** rubber, hydrogenated, block, triblock, Kraton G 1650, thermoplastic elastomer; preregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

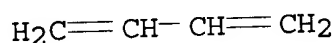
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

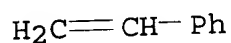
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



- (styrene-**butadiene** rubber, hydrogenated, block, triblock, maleated, thermoplastic elastomer; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IC ICM C08J005-24
ICS F16G001-08; F16G005-06; B60C001-00
- CC 39-15 (Synthetic Elastomers and Natural Rubber)
- IT Styrene-**butadiene** rubber, properties
(hydrogenated, block, triblock, Kraton G 1650, thermoplastic elastomer; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT Styrene-**butadiene** rubber, properties
(hydrogenated, block, triblock, maleated, thermoplastic elastomer; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT **Butadiene** rubber, properties
(hydroxy-terminated, Poly bd-R 45HT; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT **Butadiene** rubber, properties
(of cis-1,4-configuration, Nipol BR 1220; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT Belts
Crosslinking agents
Tires
(prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-17-2
(**butadiene** rubber, hydroxy-terminated, Poly bd-R 45HT; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-17-2
(**butadiene** rubber, of cis-1,4-configuration, Nipol BR 1220; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 461-58-5, Epicure DICY 7 9046-10-0, Jeffamine D-2000
31305-94-9, Sumiepoxy ELM 434 141255-39-2, Desmodur TPLS
2759 191941-04-5, Coronate 2512
(crosslinking agents; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-18-3
(nitrile rubber, carboxy-contg., Nipol DN 601; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

- IT 9003-18-3
(nitrile rubber, carboxy-terminated, CTBN 1300; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-18-3
(nitrile rubber, prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-55-8
(styrene-**butadiene** rubber, hydrogenated, block, triblock, Kraton G 1650, thermoplastic elastomer; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)
- IT 9003-55-8
(styrene-**butadiene** rubber, hydrogenated, block, triblock, maleated, thermoplastic elastomer; prepregs and fiber-reinforced rubber materials with good dimensional stability and resistance to heat, water and flexural fatigue)

L41 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1999:101141 Document No. 130:183446 Epoxy resin compositions for fiber reinforced composites and their manufacture. Hayashi, Masahiko; Azuma, Toshiaki; Kishi, Hajime (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 11035794 A2 19990209 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-202562 19970711.

AB Title compns., useful for fabric prepregs having smooth surface with reduced porosity as structural materials in aircrafts, automobiles, etc. (no data), comprise epoxy resins, hardeners, inorg. particles, and **butadiene-acrylonitrile rubbers**, wherein the inorg. particles are dispersed in a part of the epoxy resins. Thus, 30 parts Epikote 828 (bisphenol A epoxy) was mixed with ESCN 220 (glycidyl novolak epoxy resin) 20, Nipol 1072 (carboxyl-terminated acrylonitrile-**butadiene rubber**) 3.0, a master resin prepd. by dispersing 12 parts trimethylsilane-treated **silica** particles in 88 parts ELM 434

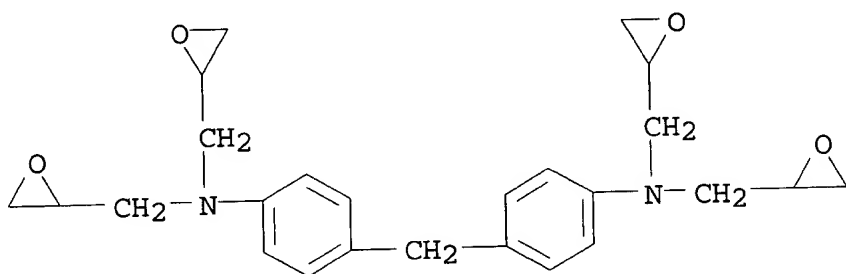
(tetraglycidylaminodiphenylmethane) 20 and 4,4'-diaminodiphenyl sulfone 27 parts to form a compn., with which a carbon fabric was impregnated and laminated to give a laminate having smooth surface.

IT 31305-94-9, ELM 434 219909-63-4
(epoxy resin compns. for fiber reinforced composites)

RN 31305-94-9 HCAPLUS
CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3
CMF C25 H30 N2 O4



RN 219909-63-4 HCAPLUS
 CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with
 (chloromethyl)oxirane, N,N'-(methylenedi-4,1-phenylene)bis[N-
 (oxiranylmethyl)oxiranemethanamine], 4,4'-sulfonylbis[benzenamine]
 and Sumiepoxy ESCN 220 (9CI) (CA INDEX NAME)

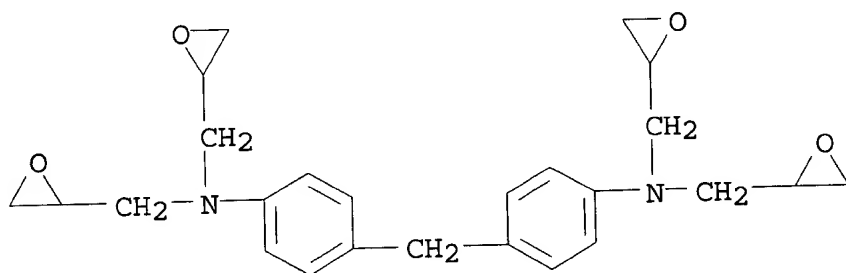
CM 1

CRN 76416-87-0
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

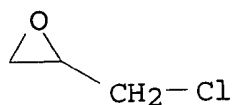
CM 2

CRN 28768-32-3
 CMF C25 H30 N2 O4



CM 3

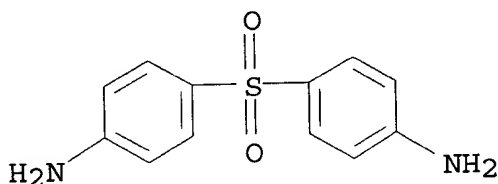
CRN 106-89-8
 CMF C3 H5 Cl O



CM 4

CRN 80-08-0

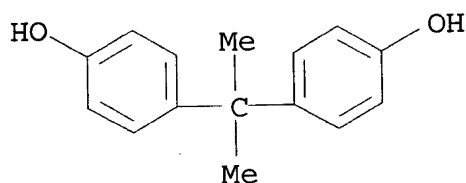
CMF C12 H12 N2 O2 S



CM 5

CRN 80-05-7

CMF C15 H16 O2



IT 9010-81-5, Acrylonitrile-**butadiene**-methacrylic
acid copolymer
(**rubber**; epoxy resin compns. for fiber reinforced
composites)

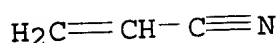
RN 9010-81-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 1,3-butadiene and
2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

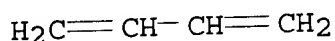
CMF C3 H3 N



CM 2

CRN 106-99-0

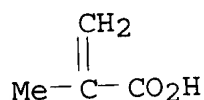
CMF C4 H6



CM 3

CRN 79-41-4

CMF C4 H6 O2



- IC ICM C08L063-00
ICS C08L063-00; C08K003-00; C08L009-02
- CC 38-3 (Plastics Fabrication and Uses)
- ST epoxy resin fiber reinforced composite surface smoothness; nitrile
rubber silica epoxy resin fiber prepreg
- IT Synthetic **rubber**, uses
(acrylonitrile-**butadiene**-methacrylic acid, Nipol 1072;
epoxy resin compns. for fiber reinforced composites)
- IT **Crosslinking** agents
Fillers
(epoxy resin compns. for fiber reinforced composites)
- IT 80-08-0, 4,4'-Diaminodiphenylsulfone
(**crosslinking** agent; epoxy resin compns. for fiber
reinforced composites)
- IT 25068-38-6, Epikote 828 31305-94-9, ELM 434 76416-87-0,
Sumiepoxy ESCN 220 219909-63-4
(epoxy resin compns. for fiber reinforced composites)
- IT 9010-81-5, Acrylonitrile-**butadiene**-methacrylic
acid copolymer
(**rubber**; epoxy resin compns. for fiber reinforced
composites)

L41 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1998:94739 Document No. 128:181528 Sulfur-free **vulcanizable**
rubber compositions. Katayama, Tatsuo (Uchiyama Kogyo K.
K., Japan). Jpn. Kokai Tokkyo Koho JP 10036563 A2 19980210 Heisei,

5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-213241
19960723.

AB Title compns. comprise 100 parts **rubbers** consisting of
0-95% nitrile **rubbers** and 5-100% carboxy-contg. nitrile
rubbers, .gtoreq.2 epoxy group-contg. compds., and N or P
compds. A compn. comprising Nipol 1042 50, Nipol DN 1072 50,
SiO2 40, stearic acid 1, paraffin oil 1,
4,4'-(.alpha.,.alpha.-dimethylbenzyl)diphenylamine 1, Epikote 604
2.5, and lauryltrimethylammonium Br- 1 part was pressed and
vulcanized at 170.degree. for 10 min to form a sheet with
JIS A hardness 72, tensile strength 183 kg/cm2, elongation 300%, and
compression set (130.degree., 70 h) 38 and showing good heat aging
and oil resistance.

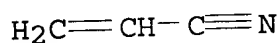
IT 9003-18-3
(nitrile **rubber**, Nipol 1042; sulfur-free
vulcanizable carboxylated nitrile **rubber**
compns. contg. epoxy resins and quaternary ammonium or
phosphonium salts)

RN 9003-18-3 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

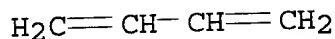
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



(nitrile **rubber**, carboxy-contg., DN 1072; sulfur-free
vulcanizable carboxylated nitrile **rubber**
compns. contg. epoxy resins and quaternary ammonium or
phosphonium salts)

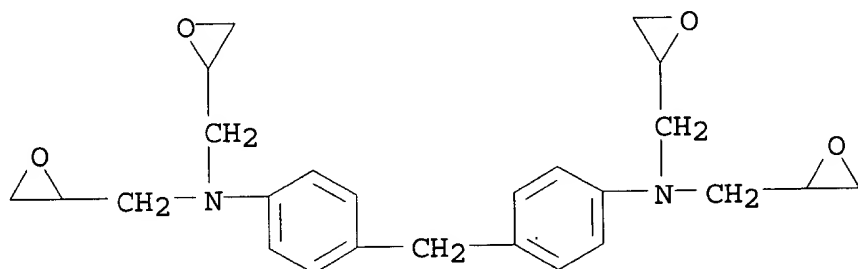
IT 31305-94-9, Epikote 604
(sulfur-free **vulcanizable** carboxylated nitrile
rubber compns. contg. epoxy resins and quaternary
ammonium or phosphonium salts)

RN 31305-94-9 HCAPLUS
CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-
(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

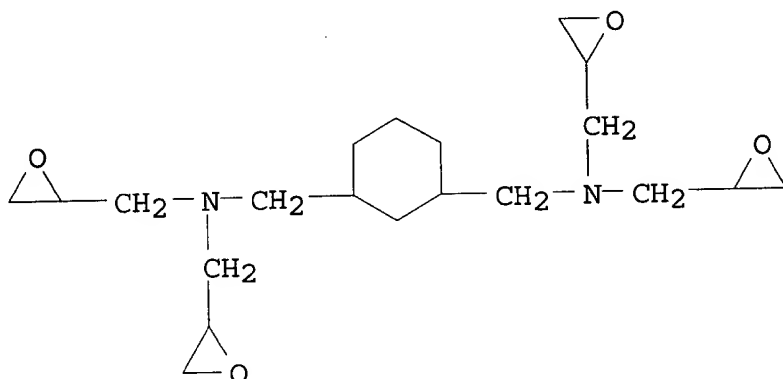
CRN 28768-32-3

CMF C25 H30 N2 O4

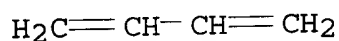


- IC ICM C08L013-00
ICS C08L063-00; C08L013-00; C08L009-02
- CC 39-10 (Synthetic Elastomers and Natural Rubber)
- ST sulfur free **vulcanization** carboxylated nitrile **rubber**; quaternary ammonium salt **vulcanizable** nitrile **rubber**; phosphonium compd **vulcanizable** carboxylated nitrile **rubber**; epoxy resin **vulcanizable** carboxylated nitrile **rubber**
- IT Nitrile **rubber**, uses
(Nipol 1042; sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT Nitrile **rubber**, uses
(carboxy-contg., DN 1072; sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT Heat-resistant materials
Oil-resistant materials
Vulcanization
(sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT Epoxides
Epoxy resins, uses
Phosphonium compounds
Quaternary ammonium compounds, uses
(sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT 9003-18-3
(nitrile **rubber**, Nipol 1042; sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT 9003-18-3

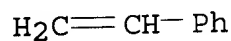
- (nitrile **rubber**, carboxy-contg., DN 1072; sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- IT 1119-94-4, Lauryltrimethylammonium bromide 2224-15-9, Ethylene glycol diglycidyl ether 3115-68-2, Tetrabutylphosphonium bromide 25068-38-6, Epikote 828 31305-94-9, Epikote 604 (sulfur-free **vulcanizable** carboxylated nitrile **rubber** compns. contg. epoxy resins and quaternary ammonium or phosphonium salts)
- L41 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1997:164611 Document No. 126:158635 Rubber compositions for studless **tire** treads with improved gripping properties. Nakanimi, Yasunobu; Yamada, Haruo (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08333480 A2 19961217 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-164543 19950608.
- AB The compns. contain 100 parts a mixt. of 10-90 parts **butadiene**-styrene copolymer having styrene content 3-9%, **butadiene** vinyl content 18-29%, Moony viscosity (at 30.degree.) before coupling (I) 10-30, Moony viscosity after coupling (C) 30-80, C/I 1.5-5, and monomodal mol. wt. distribution pattern, and 10-90 parts natural rubbers, and optional 1-50 parts **butadiene** rubber, 10-80 parts carbon black, and 5-50 parts softeners. Thus, **butadiene** and styrene were polymd. in the presence of hexane, Me₂NCH₂CH₂NMe₂, and BuLi at 100.degree., and treated with SiCl₄ to give a rubber, which (50 parts) was kneaded with natural rubber 50, Seast KH 45, arom. oil 5, Zn white 5, stearic acid 2, Nocrac 810 NA (antioxidant) 1, Nocrac CZ (vulcanizer) 1, and S 1.7 parts to give a vulcanizate showing hardness (at 23.degree.) 62, tensile strength 24.2 MPa, storage elastic modulus (at -30.degree.) 2.4 .times. 10⁻⁸ dyne/cm², loss elastic modulus (tan .delta., at -30.degree.) 0.34, Lupke resilience (at 70.degree.) 70%, wet skid resistance 48, and Moony viscosity (at 100.degree.) 64.
- IT 65992-66-7
(coupling agents; rubber compns. for studless **tire** treads with improved gripping properties)
- RN 65992-66-7 HCAPLUS
CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)- (9CI) (CA INDEX NAME)



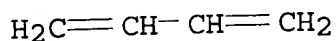
IT 9003-55-8P
 (styrene-**butadiene** rubber, rubber compns. for studless
tire treads with improved gripping properties)
 RN 9003-55-8 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6



CM 2
 CRN 100-42-5
 CMF C8 H8



IT 9003-17-2P
 (cis-1,4-**Butadiene** rubber, BR 01; rubber compns. for
 studless **tire** treads with improved gripping properties)
 RN 9003-17-2 HCAPLUS
 CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6



- IC ICM C08L007-00
ICS B60C001-00; C08K003-04; C08K005-01; C08L009-00; C08L009-06
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
- ST rubber studless **tire** tread; styrene **butadiene**
rubber **tire** tread; gripping improvement rubber
tire tread; coupling agent styrene **butadiene**
rubber; skid resistance rubber **tire** tread
- IT Carbon black, uses
(Seast KH; rubber compns. for studless **tire** treads with
improved gripping properties)
- IT Petroleum products
(arom. oils, softeners; rubber compns. for studless **tire**
treads with improved gripping properties)
- IT **Butadiene** rubber, preparation
(of cis-1,4-configuration, BR 01; rubber compns. for studless
tire treads with improved gripping properties)
- IT Aromatic oils (hydrocarbons)
(petroleum, softeners; rubber compns. for studless **tire**
treads with improved gripping properties)
- IT Coupling agents
Softening agents
(rubber compns. for studless **tire** treads with improved
gripping properties)
- IT Natural rubber, preparation
Styrene-**butadiene** rubber, preparation
(rubber compns. for studless **tire** treads with improved
gripping properties)
- IT **Tires**
(treads; rubber compns. for studless **tire** treads with
improved gripping properties)
- IT 115-21-9, Trichloroethylsilane 7646-78-8, Tin tetrachloride,
reactions 10026-04-7, Silicon tetrachloride 65992-66-7
(coupling agents; rubber compns. for studless **tire**
treads with improved gripping properties)
- IT 9003-55-8P
(styrene-**butadiene** rubber, rubber compns. for studless
tire treads with improved gripping properties)
- IT 9003-17-2P
(cis-1,4-**Butadiene** rubber, BR 01; rubber compns. for
studless **tire** treads with improved gripping properties)
- L41 ANSWER 20 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1996:138196 Document No. 124:234682 Tread rubber compositions for
tires with excellent abrasion and wet skid resistance and
low hysteresis loss. Komai, Makoto; Ito, Kazuyuki; Iwama, Satoshi;
Yoshida, Yasunori (Toyo Tire & Rubber Co, Japan). Jpn. Kokai Tokkyo
Koho JP 07330959 A2 19951219 Heisei, 6 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1994-122522 19940603.
- AB The compns. with good processability are based on (A) styrene-

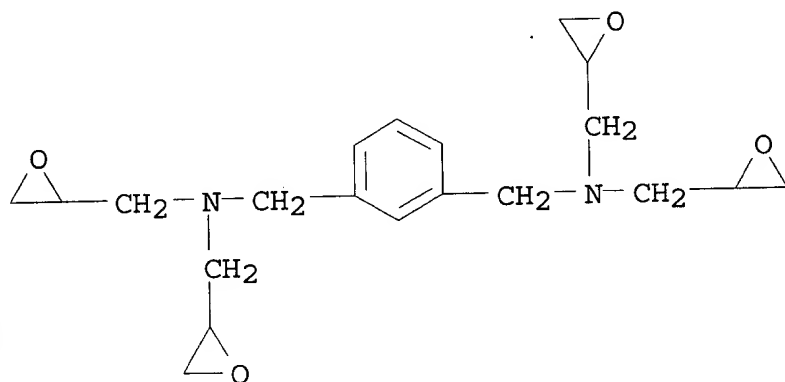
butadiene rubbers with wt.-av. mol. wt. (Mw) .gtoreq.500,000 and Mw/[no.-av. mol. wt. (Mn)] 2.2-3.2 obtained by polymn. of styrene and 1,3-**butadiene** in hydrocarbon solvents in the presence of organolithium catalysts and coupling of the resulting living polymers with diglycidylamino group-contg. multifunctional compds. or (B) other **diene** rubbers contg. .gtoreq.60% the styrene-**butadiene** rubbers, and contain 10-80 phr SiO₂ and .gtoreq.25 phr carbon black (total fillers 40-100 phr). Thus, a compn. comprising tetraglycidyl-m-xylenediamine-coupled styrene-**butadiene** rubber (Mw 680,000, Mw/Mn 3.0) 75, JSR-BR 01 25, Nipsil AQ 40, carbon black N234 30, Si 69 3.2, and process oil 30 parts showed Mooney viscosity (ML1+4, 100.degree.) .ltoreq.80. A **tire** with a tread made of the compn. showed vol. resistivity 107 .OMEGA.-cm, good abrasion and wet skid resistance, and low shear loss tangent.

IT 63738-22-7 91839-56-4

(coupling agents; diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)

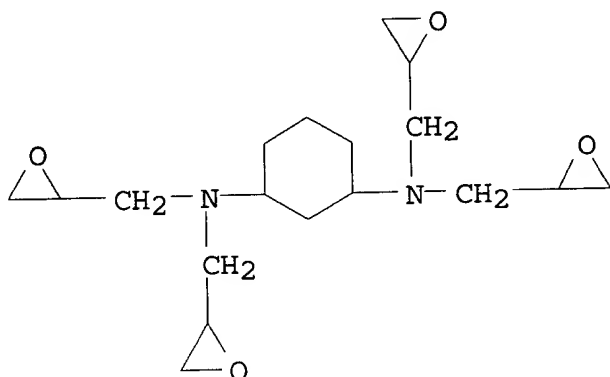
RN 63738-22-7 HCAPLUS

CN 1,3-Benzenedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)- (9CI)
(CA INDEX NAME)

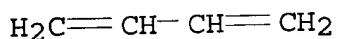


RN 91839-56-4 HCAPLUS

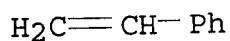
CN 1,3-Cyclohexanediamine, N,N,N',N'-tetrakis(oxiranylmethyl)- (9CI)
(CA INDEX NAME)



IT 9003-55-8
 (rubber, branched; diglycidylamine-coupled SBR rubber-carbon
 black-silica compns. for **tire** treads with good abrasion
 and wet skid resistance and elec. cond. and low hysteresis loss)
 RN 9003-55-8 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6

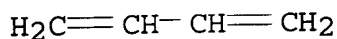


CM 2
 CRN 100-42-5
 CMF C8 H8



IT 9003-17-2
 (rubber, of cis-1,4-configuration, JSR-BR 01; in
 diglycidylamine-coupled SBR rubber-carbon black-silica compns.
 for **tire** treads with good abrasion and wet skid
 resistance and elec. cond. and low hysteresis loss)
 RN 9003-17-2 HCAPLUS
 CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0

CMF C4 H6



- IC ICM C08L009-06
ICS B60C001-00; C08K003-04; C08K003-36; C08L051-04
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
- ST **tire** tread SBR rubber glycidylamine coupling; wet skid resistance **tire** tread SBR; abrasion resistance **tire** tread SBR rubber; silica filled SBR rubber **tire** tread; carbon black conductive SBR rubber **tire**
- IT Rubber, **butadiene**-styrene, properties
(branched; diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT Abrasion-resistant materials
(diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT Carbon black, uses
(diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT Rubber, **butadiene**, properties
(of cis-1,4-configuration, JSR-BR 01; in diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT **Tires**
(treads, diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT 63738-22-7 91839-56-4
(coupling agents; diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT 7631-86-9, Nipsil AQ, uses
(diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT 9003-55-8
(rubber, branched; diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)
- IT 9003-17-2
(rubber, of cis-1,4-configuration, JSR-BR 01; in diglycidylamine-coupled SBR rubber-carbon black-silica compns. for **tire** treads with good abrasion and wet skid resistance and elec. cond. and low hysteresis loss)

L41 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2003 ACS

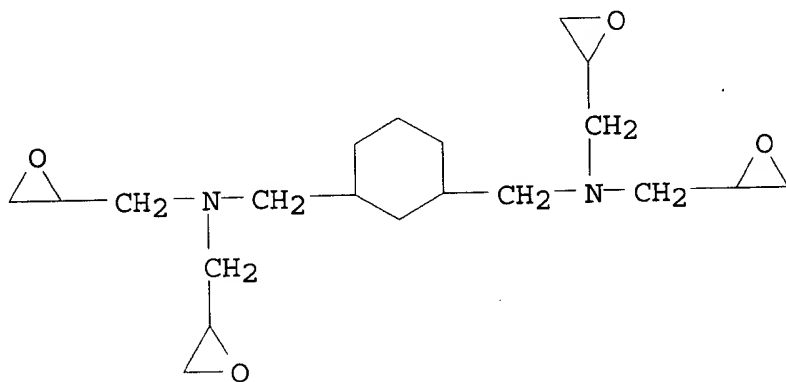
1996:67509 Document No. 124:119894 **Rubber** compositions containing **silica** for **tire** treads with low heat generation and good wet skid resistance. Saito, Akira; Sugyama, Takeshi (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07292161 A2 19951107 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-106339 19940422.

AB The title compns. contain SBR, **silica**, carbon black, silane coupling agents, extenders, **vulcanizing** agents, and additives. Polymg. styrene and **butadiene** in the presence of BuLi and treating the copolymer with 1,3-bis[(diglycidylamino)methyl]cyclohexane gave a branched copolymer which was used with Sonic X 140, Nipsil AQ, Seast KH, carbon black, Si 69, ZnO, stearic acid, iso-PrNH-p-C6H4NHPh, wax, S, N-cyclohexyl-2-benzothiazolesulfenamide, and diphenylguanidine in a compn. for **tire** treads.

IT 65992-66-7DP, reaction products with SBR
(for **tire** treads with low heat generation and good wet skid resistance)

RN 65992-66-7 HCAPLUS

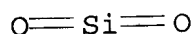
CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)



IT 7631-86-9, Nipsil AQ, uses
(in SBR compns. for **tire** treads with low heat generation and good wet skid resistance)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9003-55-8P

(**rubber**, branched; for **tire** treads with low heat generation and good wet skid resistance)

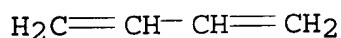
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

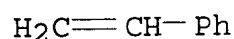
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



IT 9003-17-2

(**rubber**, for **tire** treads with low heat generation and good wet skid resistance)

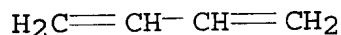
RN 9003-17-2 HCAPLUS

CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6



IC ICM C08L009-06

ICS B60C001-00; C08C019-20; C08K003-04; C08K005-01; C08K005-54

CC 39-13 (Synthetic Elastomers and Natural Rubber)

ST SBR **tire** tread wet skid resistance; **silica** SBR **tire** tread skid resistance; epoxide branching SBR **tire** tread; silane tetrachloro branching SBR **tire** tread

IT **Rubber, butadiene-styrene**, preparation (branched; for **tire** treads with low heat generation and good wet skid resistance)

IT Carbon black, uses (fillers; in SBR compns. for **tire** treads with low heat generation and good wet skid resistance)

IT **Rubber, butadiene**, properties (for **tire** treads with low heat generation and good wet skid resistance)

IT **Tires**
 (treads, SBR compns. with low heat generation and good wet skid
 resistance)

IT 10026-04-7DP, Silicon tetrachloride, reaction products with SBR
65992-66-7DP, reaction products with SBR
(for tire treads with low heat generation and good wet
skid resistance)

IT 7631-86-9, Nipsil AQ, uses 40372-72-3, Si 69
(in SBR compns. for **tire** treads with low heat
generation and good wet skid resistance)

IT 9003-55-8P
(rubber, branched; for tire treads with low heat generation and good wet skid resistance)

IT 9003-17-2
(**rubber**, for **tire** treads with low heat generation and good wet skid resistance)

L41 ANSWER 22 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1994:657461 Document No. 121:257461 Polynorbornene-ultrahigh molecular
weight polyethylene composite films for bonding incompatible rubber
and plastic layers. Hirakawa, Hiroshi (Yokohama Rubber Co Ltd,
Japan). Jpn. Kokai Tokkyo Koho JP 06126899 A2 19940510 Heisei, 6
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-280153
19921019.

AB The title composite films useful for processing of tires, conveyor belts, hose, etc. (no data) comprise a polynorbornene film layer and a ultrahigh-mol.-wt. polyethylene (I) which is obtained by slicing a rod of sintered I.

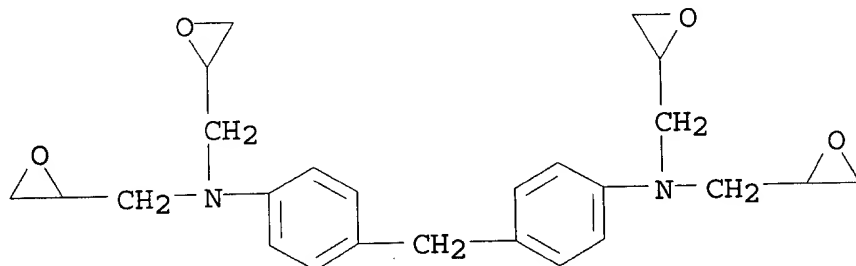
IT 31305-94-9, Araldite MY720
(polynorbornene-ultrahigh mol. wt. polyethylene composite films
for bonding incompatible layers of)

RN	31305-94-9	HCAPLUS
CN	Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)	

CM 1

CRN 28768-32-3

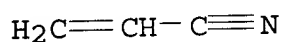
CMF C25 H30 N2 O4



IT 9003-18-3
(rubber, carboxy-terminated, Hycar-CTNB; polynorbornene-ultrahigh
mol. wt. polyethylene composite films for bonding incompatible
layers of)
RN 9003-18-3 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

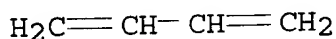
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

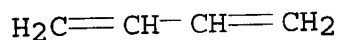
CRN 106-99-0
CMF C4 H6



(rubber, carboxy-terminated, reaction products, with epoxy
resins; polynorbornene-ultrahigh mol. wt. polyethylene composite
films for bonding incompatible layers of)
IT 9003-55-8
(rubber, polynorbornene-ultrahigh mol. wt. polyethylene composite
films for bonding incompatible layers of)
RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

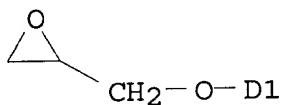
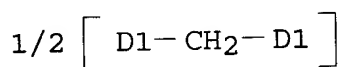
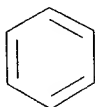
- IC ICM B32B027-00
ICS B32B025-08; B32B027-32
- CC 38-3 (Plastics Fabrication and Uses)
- IT Epoxy resins, uses
Rubber, **butadiene**-styrene, uses
Rubber, neoprene, uses
Rubber, nitrile, uses
(polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- IT Rubber, synthetic
(acrylonitrile-**butadiene**-methacrylic acid, polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- IT 25068-38-6, Epikote 828 31305-94-9, Araldite MY720
37260-21-2, DER511
(polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- IT 9003-18-3
(rubber, carboxy-terminated, Hycar-CTNB; polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- IT 9003-18-3
(rubber, carboxy-terminated, reaction products, with epoxy resins; polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- IT 9003-18-3 9003-55-8 9010-98-4
(rubber, polynorbornene-ultrahigh mol. wt. polyethylene composite films for bonding incompatible layers of)
- L41 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1994:165993 Document No. 120:165993 Toughened bicontinuous resin system. Malhotra, Vinay; Almen, Gregory R.; Hushower, Mary (ICI Composites Inc., USA). U.S. US 5266610 A 19931130, 5 pp. Cont. of U.S. Ser. No. 666,984, abandoned. (English). CODEN: USXXAM.
APPLICATION: US 1992-951029 19920924. PRIORITY: US 1991-666984 19910311.
- AB The resin system comprises thermoplastic and thermoset resins wherein the phase morphol. is bicontinuous, and core-shell particulate toughening agents. A typical blend contained epoxy resins and **crosslinking** agents, a polyarylsulfone, and Nipol 5078.
- IT 7631-86-9, **Silica**, uses
(core, in core-shell toughening agents for bicontinuous thermoset-thermoplastic blends)
- RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 153600-25-0 153600-26-1 153600-27-2
(polyarylsulfone blends contg. core-shell toughening agents)
RN 153600-25-0 HCAPLUS
CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-
polymer with 2,2'-[methylenebis(phenyleneoxymethylene)]bis[oxirane
] and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

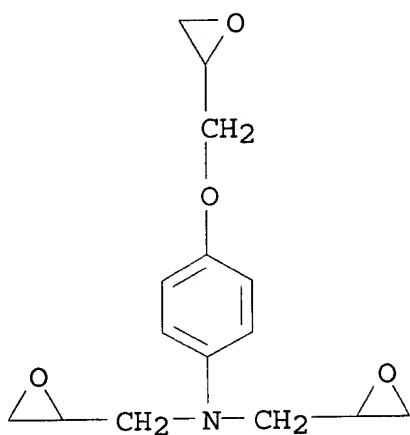
CM 1

CRN 39817-09-9
CMF C19 H20 O4
CCI IDS



CM 2

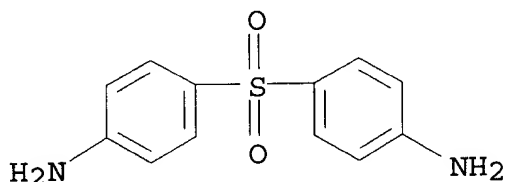
CRN 5026-74-4
CMF C15 H19 N O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



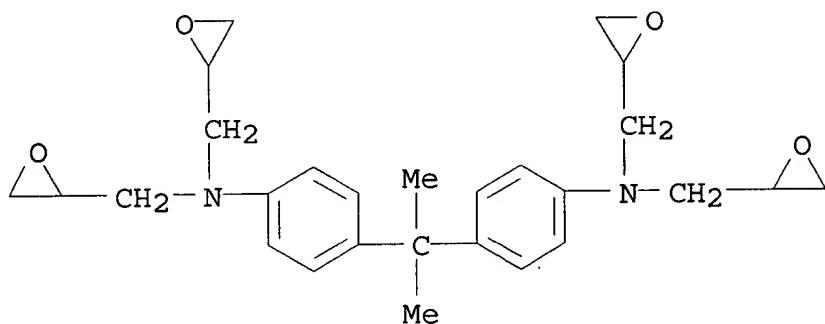
RN 153600-26-1 HCAPLUS

CN Oxiranemethanamine, N,N'-[(1-methylethylidene)bis(4,1-phenylene)]bis[N-(oxiranylmethyl)-, polymer with N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)oxiranemethanamine and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 58086-89-8

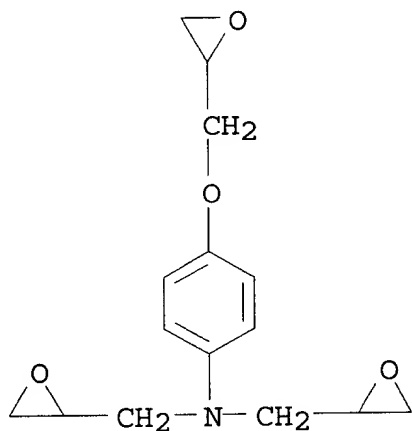
CMF C27 H34 N2 O4



CM 2

CRN 5026-74-4

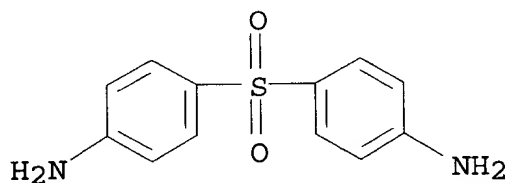
CMF C15 H19 N O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



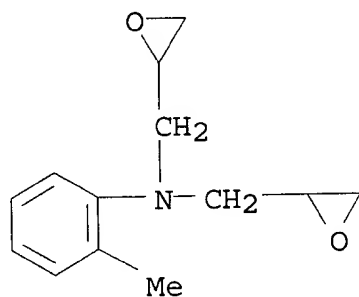
RN 153600-27-2 HCAPLUS

CN Oxiranemethanamine, N-(2-methylphenyl)-N-(oxiranylmethyl)-, polymer with 2,2'-[methylenebis(phenyleneoxymethylene)]bis[oxirane], N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)oxiranemethanamine and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 40027-50-7

CMF C13 H17 N O2

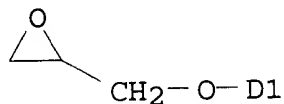
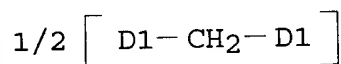
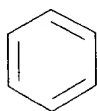


CM 2

CRN 39817-09-9

CMF C19 H20 O4

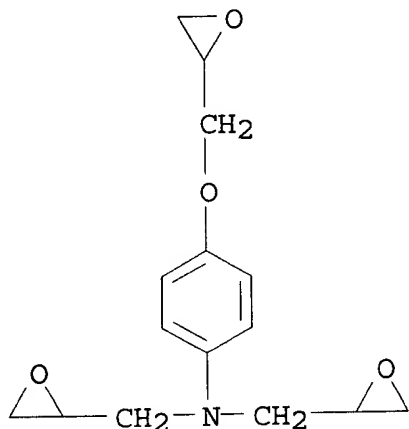
CCI IDS



CM 3

CRN 5026-74-4

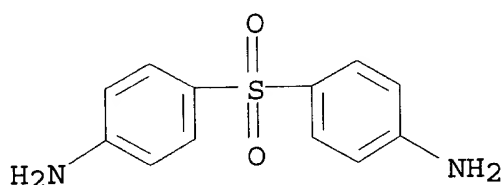
CMF C15 H19 N O4



CM 4

CRN 80-08-0

CMF C12 H12 N2 O2 S



IT 9003-55-8

(rubber, shell, in core-shell toughening agents for
bicontinuous thermoset-thermoplastic blends)

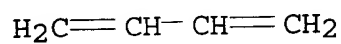
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

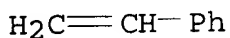
CRN 106-99-0

CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8

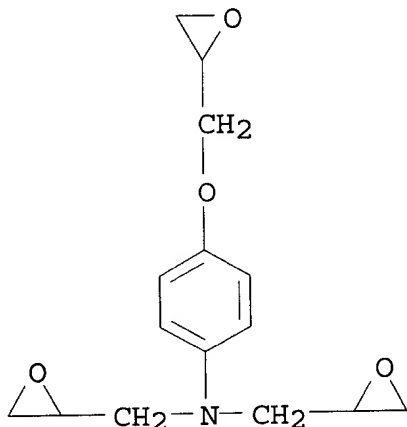


- IC ICM C08K009-04
ICS C08F283-00
- NCL 523201000
- CC 37-6 (Plastics Manufacture and Processing)
- IT **Rubber, butadiene-styrene**, uses
 Rubber, ethylene-propene
 Rubber, isoprene, uses
 Rubber, natural, uses
 (shell, in core-shell toughening agents for bicontinuous
 thermoset-thermoplastic blends)
- IT **Rubber**, synthetic
 (acrylic acid-acrylonitrile-**butadiene**, core-shell
 toughening agents, for bicontinuous thermoset-thermoplastic
 blends)
- IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses
 7631-86-9, **Silica**, uses
 (core, in core-shell toughening agents for bicontinuous
 thermoset-thermoplastic blends)
- IT 153600-25-0 153600-26-1 153600-27-2
 (polyarylsulfone blends contg. core-shell toughening agents)
- IT 9003-31-0 9003-55-8 9010-79-1
 (**rubber**, shell, in core-shell toughening agents for
 bicontinuous thermoset-thermoplastic blends)
- L41 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2003 ACS
 1993:61125 Document No. 118:61125 High performance epoxy adhesives.
 Behm, Dean Tallack; LaBelle, Thomas Loren Arthur; Wongkamolsesh,
 Kachorn (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 488949 A2
 19920603, 18 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT.
 (English). CODEN: EPXXDW. APPLICATION: EP 1991-810902 19911120.
 PRIORITY: US 1990-620244 19901129.
- AB The title adhesives comprise a component contg. .gtoreq.1 arom.
 epoxy resin and a hardener component contg. a dimer acid-based
 polyamide, .gtoreq.1 aliph. or alicyclic amine, and .gtoreq.1 arom.
 amine where the compn. also contains a sorbitol polyglycidyl ether
 in the epoxy component and/or a tertiary amine in the hardener
 component as accelerators. An adhesive was prepd. from an epoxy
 component contg. bisphenol A epoxy resin 47.50, epoxy resin of
 sorbitol 12.50, epoxy resin of p-aminophenol 15.00, epoxysilane
 0.50, Al powder 10.00, wollastonite 12.50, and fumed **silica**
 2.00% and a hardener component contg. Versamid 140CE 22.92, and
 amine adduct (HY 355) 12.73, 3-dimethylaminopropylamine 7.15,
 amino-terminated nitrile **rubber** 49.95,
 tris(dimethylamino)phenol 3.00, aminosilane 1.50, surfactant 0.25,
 and fumed **silica** 2.50%.

IT 5026-74-4

(epoxy resin adhesive compns. contg. amine **crosslinkers**
and)

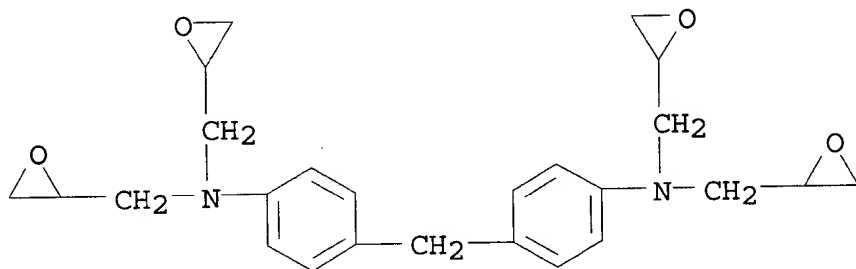
RN 5026-74-4 HCAPLUS

CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-
(9CI) (CA INDEX NAME)

IT 28768-32-3

(epoxy resin adhesive compns., contg. amine hardeners)

RN 28768-32-3 HCAPLUS

CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-
(oxiranylmethyl)- (9CI) (CA INDEX NAME)

IT 9003-18-3

(rubber, amine-terminated, **crosslinking**
agents contg., for epoxy resin adhesives)

RN 9003-18-3 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

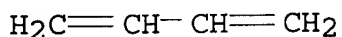
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



- IC ICM C09J163-00
ICS C08G059-50; C08G059-60
- CC 38-3 (Plastics Fabrication and Uses)
- IT **Crosslinking** agents
(dimer acid-base polyimide-aliph. or alicyclic amine-arom. amine mixts., for epoxy resin adhesives, polyglycidyl ether of sorbitol or tertiary amine accelerators for)
- IT **Crosslinking** catalysts
(polyglycidyl ethers of sorbitol or tertiary amines, for epoxy resin-amine adhesive compns.)
- IT Amines, uses
(alicyclic, **crosslinking** agents contg., for epoxy resin adhesives)
- IT Amines, uses
(aliph., **crosslinking** agents contg., for epoxy resin adhesives)
- IT **Rubber**, nitrile, uses
(amine-terminated, **crosslinking** agents contg., for epoxy resin adhesives)
- IT Amines, uses
(aryl, **crosslinking** agents contg., for epoxy resin adhesives)
- IT Polyamides, uses
(dimer acid-based, **crosslinking** agents contg., for epoxy resin adhesives)
- IT Phenolic resins, miscellaneous
(epoxy, novolak, epoxy resin adhesives contg., amine **crosslinkers** for)
- IT Epoxy resins, miscellaneous
(phenolic, novolak, epoxy resin adhesives contg., amine **crosslinkers** for)
- IT Amines, uses
(tertiary, **crosslinking** catalysts, for epoxy resin-amine adhesives)
- IT 25068-38-6, Bisphenol A-epichlorohydrin copolymer
(adhesives, contg. amine **crosslinkers**)
- IT 80-08-0, Bis(p-aminophenyl)sulfone 92-87-5, Benzidine 101-77-9,

4,4'-Methylenedianiline 101-80-4, Diaminodiphenyl ether 104-78-9
 106-50-3, p-Phenylenediamine, miscellaneous 107-15-3,
 Ethylenediamine, miscellaneous 108-45-2, m-Phenylenediamine,
 miscellaneous 109-55-7, N,N-Dimethylpropylenediamine 111-40-0,
 Diethylenetriamine 111-41-1 112-24-3 112-57-2,
 Tetraethylenepentamine 119-90-4, Dianisidine 124-09-4,
 Hexamethylenediamine, miscellaneous 139-65-1 140-31-8,
 1-Piperazineethanamine 141-43-5, Monoethanolamine, miscellaneous
 141-86-6, 2,6-Diaminopyridine 616-47-7, 1-Methylimidazole
 694-83-7, 1,2-Diaminocyclohexane 1477-55-0, m-Xylylenediamine
 1761-71-3, Bis(p-aminocyclohexyl)methane 2579-20-6,
 1,3-Bis(aminomethyl)cyclohexane 2855-13-2 3114-70-3,
 1,4-Diaminocyclohexane 3377-24-0, 2,2-Bis(4-
 aminocyclohexyl)propane 6864-37-5, Bis(4-amino-3-
 methylcyclohexyl)methane 25376-45-8, Toluenediamine 25513-64-8
 145538-07-4, Hy 355 145539-13-5, Versamid 140CE 145539-16-8, XB
 3075

(**crosslinking** agents contg., for epoxy resin adhesives)

IT 25120-31-4 71228-86-9, XU-GY 358

(epoxy resin adhesive compns. contg. amine **crosslinkers**
)

IT 3454-29-3, Trimethylolpropane triglycidyl ether 5026-74-4
 5493-45-8 36366-26-4, Trimethylolethane triglycidyl ether

(epoxy resin adhesive compns. contg. amine **crosslinkers**
 and)

IT 25068-38-6, Bisphenol A-epichlorohydrin copolymer
 (epoxy resin adhesive compns., contg. amine **crosslinkers**
)

IT 28768-32-3

(epoxy resin adhesive compns., contg. amine hardeners)

IT 9003-18-3

(**rubber**, amine-terminated, **crosslinking**
 agents contg., for epoxy resin adhesives)

L41 ANSWER 25 OF 30 HCAPLUS COPYRIGHT 2003 ACS

1992:532735 Document No. 117:132735 Process for producing aromatic
 polyamide fibers for rubber reinforcement. Kuribayashi, Hideyuki;
 Koizumi, Tatsuya (Sumitomo Chemical Co., Ltd., Japan). PCT Int.
 Appl. WO 9207133 A1 19920430, 22 pp. DESIGNATED STATES: W: US; RW:
 DE, GB, NL. (Japanese). CODEN: PIXXD2. APPLICATION: WO
 1991-JP1443 19911021. PRIORITY: JP 1990-286579 19901023; JP
 1990-404285 19901220.

AB The title fibers are prepd. by treating aramid fibers with liqs.
 contg. 0.1-30% arom. glycidylamines (A) contg. .gtoreq.2 epoxy
 groups and 1-100 parts arom. amines per 100 parts A, subsequently
 treating the fibers with liqs. contg. formaldehyde-resorcinol
 copolymer (I) and rubber latexes, and curing the finishes. Thus,
 poly(p-phenylene terephthalamide) cords were dipped in a liq. contg.
 2.0 parts Sumiepoxy ELM-434 (II, tetraglycidyl-diaminodiphenylmethane
 homopolymer) and 0.060 part 3,4'-diaminodiphenyl ether and cured 2
 min at 150.degree. and 2 min at 240.degree.. The cords were then
 immersed in a liq. contg. I and **butadiene**

-styrene-vinylpyridine rubber latex cured 2 min at 150.degree. and 2 min at 240.degree., sandwiched between 2 rubber compds., and vulcanized 15 min at 150.degree. to give embedded cords with layer bonding strength 18.5 kg/2 cm initially and 18.1 kg/2 cm after 3 day, in H₂O, vs. 7.6 and 4.7, resp., using bisphenol A diglycidyl ether homopolymer instead of II.

IT 31305-94-9, Sumiepoxy ELM 434
(finishes, contg. arom. diamines, for aramid fibers, for improved adhesion to rubber)

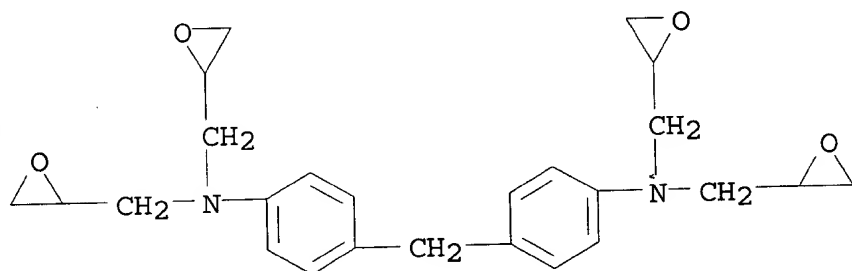
RN 31305-94-9 HCAPLUS

CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3

CMF C25 H30 N2 O4



IT 9019-71-0, Butadiene-styrene-vinylpyridine copolymer
(rubber, resorcinol copolymer finishes contg., for aramid fibers)

RN 9019-71-0 HCAPLUS

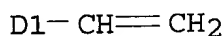
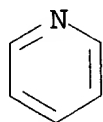
CN Pyridine, ethenyl-, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 1337-81-1

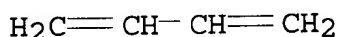
CMF C7 H7 N

CCI IDS



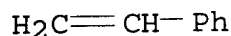
CM 2

CRN 106-99-0
CMF C4 H6



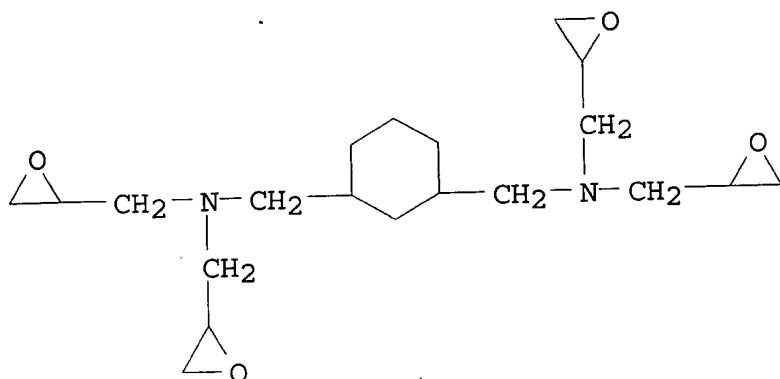
CM 3

CRN 100-42-5
CMF C8 H8



IC ICM D06M015-693
ICS D06M013-385; D06M015-55; C08J005-06
ICA D01F006-60
ICI C08L021-00, D06M101-36
CC 39-13 (Synthetic Elastomers and Natural Rubber)
ST aramid fiber finishing rubber reinforcement; epoxy resin finish
aramid fiber; diaminodiphenyl ether finish aramid fiber;
tire cord aramid fiber
IT Polyamide fibers, miscellaneous
(aramid, finishing of, with epoxy resins contg. arom. diamines,
for **tire** cords)
IT Rubber, synthetic
(**butadiene**-styrene-vinylpyridine, resorcinol copolymer
finishes contg., for aramid fibers)
IT **Tires**
(cords, aramid fibers, epoxy resins contg. arom. diamine as
primary finishes for)
IT 24938-64-5, Poly(P-phenyleneterephthalamide) 25035-37-4,
p-Phenylenediamine-terephthalic acid copolymer
(fiber, finishing of, with epoxy resins contg. arom. diamine, for
tire cords)

- IT 31305-94-9, Sumiepoxy ELM 434
(finishes, contg. arom. diamines, for aramid fibers, for improved
adhesion to rubber)
- IT 9019-71-0, Butadiene-styrene-vinylpyridine
copolymer
(rubber, resorcinol copolymer finishes contg., for aramid fibers)
- L41 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1989:535792 Document No. 111:135792 Preparation and uses of
diene block rubbers. Hattori, Yasuo; Kitagawa, Yuichi
Moakuresuto Ta; Saito, Akira (Asahi Chemical Industry Co., Ltd.,
Japan). Eur. Pat. Appl. EP 318052 A2 19890531, 69 pp. DESIGNATED
STATES: R: BE, DE, ES, FR, GB, IT, NL. (English). CODEN: EPXXDW.
APPLICATION: EP 1988-119810 19881128. PRIORITY: JP 1987-297475
19871127; JP 1988-14500 19880127; JP 1988-44597 19880229; JP
1988-53597 19880309; JP 1988-53598 19880309; JP 1988-125850
19880525.
- AB **Diene** block rubbers, having improved cold flow, excellent
phys. properties and processability, and useful for tire
components and industrial parts, comprise (A) a
polybutadiene (I) block having a sp. glass transition temp.
(Tg), cryst. m.p., microstructure, and mol. wt. distribution
[wt.-av. mol. wt. (Mw)/no.-av. mol. wt. (Mn)] and (B) a conjugated
diene rubber block having a different Tg and cryst. m.p.,
wherein the wt. ratio of block A to block B is 2-80:98-20, the mol.
wt. is 20,000-500,000, and Mw/Mn is 1.1-5. The **diene**
block rubber is prepd. by polymn. of **butadiene** (II) in an
inert solvent in the presence of a catalyst comprising rare earth
and organomagnesium compds. at 0-150.degree. to 80-93% trans units,
adding an organolithium catalyst and polymg. II to .ltoreq.60% trans
units at 30-200.degree., and stripping the inert solvent from the
polymer. Thus, II was batch polymd. in cyclohexane in the presence
of La versaticate (III), Bu2Mg, and BuLi at 68.degree. to give I
having a microstructure 87% trans, 5% vinyl, and 8% cis, Mw/Mn 1.2,
and cryst. m.p. 85.degree.. I soln. was mixed with addnl. BuLi,
polymd. at 115.degree. for 1.5 h, stabilized, steam-stripped, and
dried to give a mixt. of 72 wt.% **diene** block polymer and
28 wt.% nonblock rubber. The wt. ratio of the resinous I block (A)
to rubbery conjugated **diene** block (B) was 54:46. The
rubber specimen showed cold flow 3, mill behavior excellent, tensile
strength 215 kg/cm2, elongation 515%, and impact resilience 59,
compared with 2, good, 170, 400, and 54, resp., for a similar rubber
prepd. without III and Bu2Mg. I was an excellent toughening agent
for polystyrene resins.
- IT 65992-66-7
(manuf. in presence of, for stereoregular block **diene**
rubber)
- RN 65992-66-7 HCAPLUS
CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
(9CI) (CA INDEX NAME)



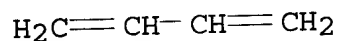
IT 106107-54-4
(rubber, block, manuf. of stereoregular, catalysts and method for)

RN 106107-54-4 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene, block (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

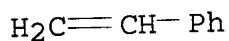
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



IC ICM C08F297-04
ICS C08L053-02

CC 39-4 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 37

ST rare earth catalyst polymn **diene**; magnesium organo catalyst polymn **diene**; **butadiene** polymn stereospecific catalyst; polystyrene toughening **butadiene** rubber

IT Rare earth metals, compounds
(catalysts, for stereospecific polymn. of **dienes**)

IT **Tires**
(stereoregular block **diene** rubber for, wear- and

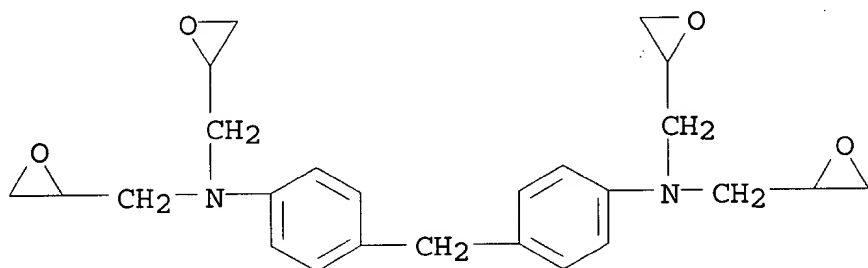
- wet-skid-resistant)
- IT Rubber, **butadiene**-styrene, preparation
(block, manuf. of stereoregular, catalysts and method for)
- IT Polymerization catalysts
(block, stereospecific, rare earth and organomagnesium compds.,
for conjugated **dienes**)
- IT Fatty acids, compounds
(branched, lanthanum salts, catalysts, for stereospecific polymn.
of **dienes**)
- IT Rubber, synthetic
(**butadiene**-**diene**, block, manuf. of
stereoregular, catalysts and method for)
- IT 1191-47-5, Dibutylmagnesium 7439-91-0D, Lanthanum, versatic acid
salts
(catalysts, for stereospecific polymn. of **dienes**)
- IT 1461-22-9, Tributyltin chloride 7646-78-8, Tin tetrachloride, uses
and miscellaneous **65992-66-7**
(manuf. in presence of, for stereoregular block **diene**
rubber)
- IT 9003-53-6P, Polystyrene
(manuf. of impact-resistant, toughening agents for, stereoregular
butadiene rubber as)
- IT 538-75-0, Dicyclohexylcarbodiimide
(modifiers, for **diene** rubbers)
- IT **106107-54-4**
(rubber, block, manuf. of stereoregular, catalysts and method
for)

L41 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1989:408763 Document No. 111:8763 Glycidylamino compound-coupled
butadiene rubbers for **tires**. Kitagawa, Yuichi;
Yamada, Haruo (Asahi Chemical Industry Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 01001744 A2 19890106 Heisei, 14 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-156653 19870625.
AB Compns. with good balance of abrasion resistance, antiaging,
low-temp. hardness, and impact resilience contain 20-100 parts
extender oils having volatile content (Cv) .ltoreq.0.3%, arom.
hydrocarbon (Ca; Crootz anal.) .ltoreq.10%, and viscosity sp. gr.
const. (Vc) .ltoreq.0.85 and 100 parts polymers (X2N)mR(NXY)n (m, n
= 0-6 integers, n = 0; m .gtoreq. 1; m = 0, n .gtoreq. 2; R = Cl-20
active H-contg. org. groups, or Si compds.; Y = glycidyl; X =
CH2CHOHCH2D, D = **butadiene** polymer moiety) having
glass-transition temp. (Tg) -50 to -100.degree. and wt.-av. mol. wt.
(Mw) 5 .times. 104-106. A vulcanized compn. contg. 25 parts natural
rubber and 75 parts mixt. of 50 parts paraffin oil having Cv 0.05%,
Ca 3.0%, and Vc 0.8046 and 100 parts 2-tetraglycidyl-1,3-
bisaminomethylcyclohexane-coupled 1,2-**butadiene**-1,3-
butadiene polymer having Mw 5.5 .times. 104 and Tg
-95.degree. showed impact resilience (JISK 6301; 70.degree.) 64,
heat buildup 31.degree., abrasion resistance 110%, hardness 62 and
75 at -10.degree. and -50.degree., resp., and good heat resistance
(100.degree., 96 h).

IT 28768-32-3DP, reaction products with **butadiene**
 rubber 63738-22-7DP, reaction products with
butadiene rubber 65992-66-7DP, reaction products
 with **butadiene** rubber
 (manuf. of, oil-extended, for **tires**)

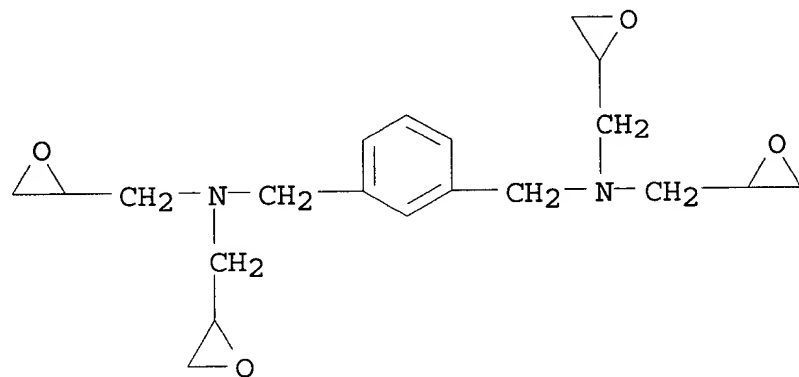
RN 28768-32-3 HCAPLUS

CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-
 (oxiranylmethyl)- (9CI) (CA INDEX NAME)



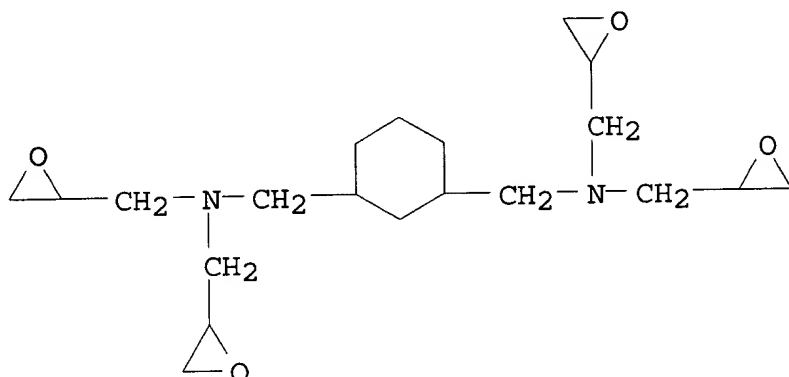
RN 63738-22-7 HCAPLUS

CN 1,3-Benzenedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)- (9CI)
 (CA INDEX NAME)



RN 65992-66-7 HCAPLUS

CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl)-
 (9CI) (CA INDEX NAME)



- IC ICM C08L015-00
ICS C08F008-30; C08K005-01
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
- ST **butadiene** rubber glycidylamino coupler **tire**;
impact resilience glycidylamino **polybutadiene tire**;
; abrasion resistance glycidylamino **polybutadiene**
tire; heat buildup resistance glycidylamino
polybutadiene; low temp hardness glycidylamino
polybutadiene; antiaging glycidylamino **polybutadiene**
rubber **tire**
- IT **Tires**
(glycidylamino compd.-coupled **butadiene** rubbers for,
oil-extended, with good balance of properties)
- IT Abrasion-resistant materials
(**tires**, contg. glycidylamino compd.-coupled
butadiene rubbers, manuf. of)
- IT 28768-32-3DP, reaction products with **butadiene**
rubber 32144-31-3DP, Diglycidylaniline, reaction products with
butadiene rubber 63738-22-7DP, reaction products
with **butadiene** rubber 65992-66-7DP, reaction
products with **butadiene** rubber
(manuf. of, oil-extended, for **tires**)
- L41 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1988:511552 Document No. 109:111552 Fiber reinforced thermosetting
resin compositions with coated fibers for improved toughness.
Maranci, Arutun (American Cyanamid Co., USA). U.S. US 4737527 A
19880412, 13 pp. (English). CODEN: USXXAM. APPLICATION: US
1984-602996 19840423.
- AB Composites contg. reinforcing fibers coated with elastomeric
materials and heat-curable compns. contg. epoxy prepolymers and
amine curing agents Z(OCOC6H4NHR)_n (n = 2-3; R = H, alkyl or aryl; Z
= di- or trivalent group) have high fracture toughness and
compressive strength. Thus, coating epoxy-sized carbon fibers
(Celion 6K) in a 3.5% CH₂Cl₂ soln. of nitrile **rubber**
(Hycar 1472) and tetrafunctional epoxy resin (MY720), drying at
90.degree. for 8 min, and coating and curing with a mixt. of

4,4'-bis(diglycidylamino)diphenylmethane 80, tetraglycidoxytetraphenylethane 20, trimethylene glycol di-p-aminobenzoate 44, SiO₂ 6, and TDI-HNMe₂ adduct 1 phr gave laminates having fracture toughness 2.78 lb-in./in.² and compressive strength 40,300 psi.

IT 109033-02-5

(carbon fiber-reinforced, couplers for)

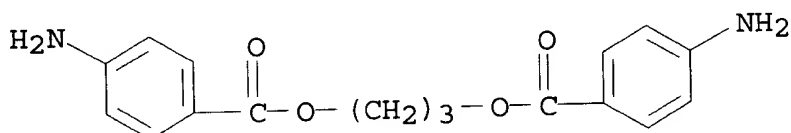
RN 109033-02-5 HCAPLUS

CN 1,3-Propanediol, bis(4-aminobenzoate), polymer with 2,2',2'',2'''-[1,2-ethanediylidenetetrakis(4,1-phenyleneoxymethylene)]tetrakis[oxirane] and N,N'-(methylenedi-4,1-phenylene)bis[N-(oxiranylmethyl)oxiranemethanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 57609-64-0

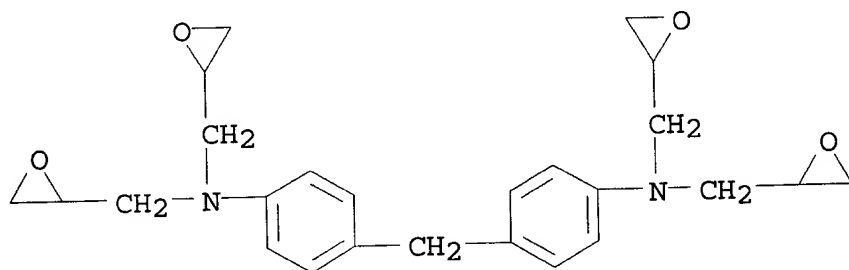
CMF C17 H18 N2 O4



CM 2

CRN 28768-32-3

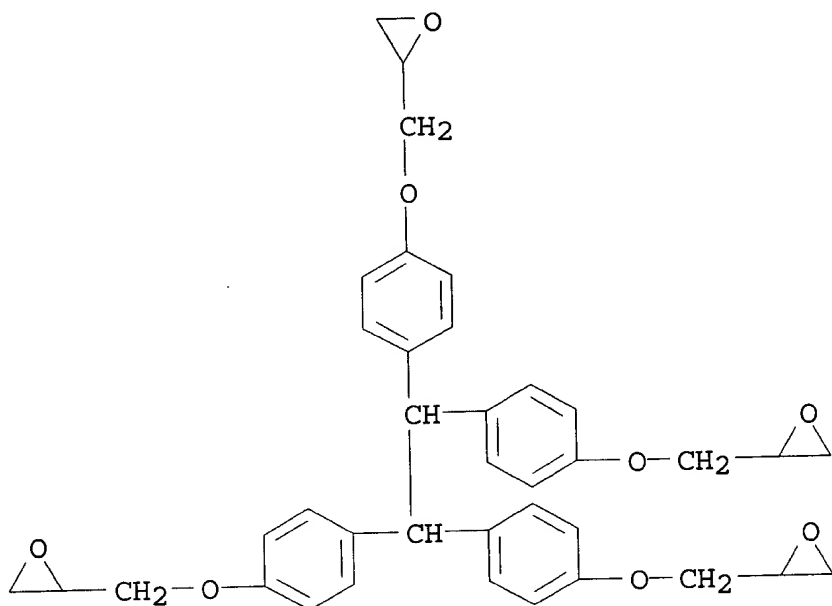
CMF C25 H30 N2 O4



CM 3

CRN 7328-97-4

CMF C38 H38 O8



IT 31305-94-9, 4,4'-Methylenebis(N,N-diglycidylaniline) polymer
(couplers, for carbon fibers in epoxy resins)

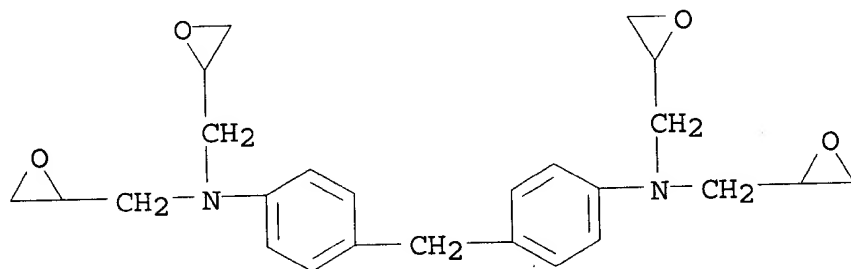
RN 31305-94-9 HCAPLUS

CN Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-
(oxiranylmethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 28768-32-3

CMF C25 H30 N2 O4



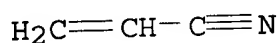
IT 9003-18-3
(rubber, carboxy-contg., couplers, for carbon fibers in
epoxy resins)

RN 9003-18-3 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

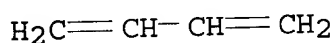
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6

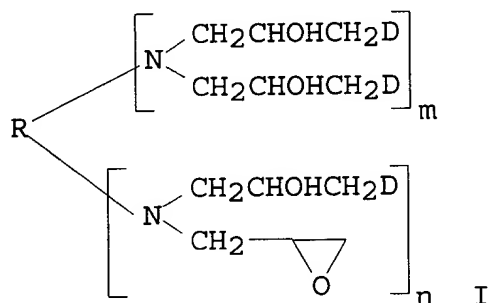


IC ICM C08K009-04
NCL 523205000
CC 37-6 (Plastics Manufacture and Processing)
ST epoxy resin composite fiber; carbon fiber composite; nitrile
rubber coating fiber; **rubber** coating fiber
composite; **crosslinking** agent epoxy composite;
aminobenzoate ester **crosslinker** epoxy
IT Coupling agents
(epoxy resins and nitrile **rubber**, for carbon fibers in
epoxy resins)
IT **Crosslinking** agents
(glycol aminobenzoates, for carbon fiber-reinforced epoxy resins)
IT **Rubber**, nitrile, uses and miscellaneous
(carboxy-contg., couplers, for carbon fibers in epoxy resins)
IT 109033-02-5
(carbon fiber-reinforced, couplers for)
IT 31305-94-9, 4,4'-Methylenebis(N,N-diglycidylaniline) polymer
(couplers, for carbon fibers in epoxy resins)
IT 20449-04-1, Triethylene glycol bis(4-aminobenzoate) 26383-62-0
26383-63-1 32001-91-5, Bisphenol A bis(4-aminobenzoate)
101156-17-6 116380-49-5
(**crosslinking** agents, for carbon fiber-reinforced epoxy
resins)
IT 9003-18-3
(**rubber**, carboxy-contg., couplers, for carbon fibers in
epoxy resins)

L41 ANSWER 29 OF 30 HCAPLUS COPYRIGHT 2003 ACS
1988:95967 Document No. 108:95967 **Diene** polymers, their
manufacture, and their compositions. Kitagawa, Yuichi; Hattori,
Yasuo; Saito, Akira (Asahi Chemical Co., Ltd., Japan). PCT Int.
Appl. WO 8705610 A1 19870924, 74 pp. DESIGNATED STATES: W: JP, KR,
US; RW: BE, DE, FR, GB, IT. (Japanese). CODEN: PIXXD2.
APPLICATION: WO 1987-JP159 19870313. PRIORITY: JP 1986-53786

19860313; JP 1986-53787 19860313.

GI



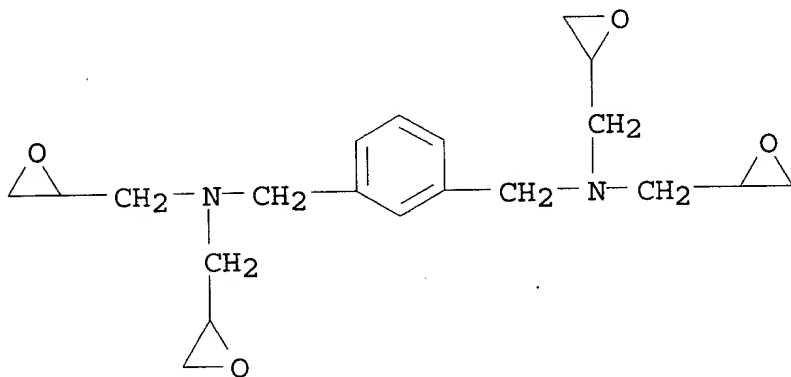
AB **Diene** polymers I (D = **diene** rubbers; R = C1-20 groups contg. active H, Si compd. residues; m = 0 or 1-6; n = 0 or 1-6; m > 1 when n = 0; n > 2 when m = 0) having wt.-av.-mol. wt. 104-106 do not produce corrosive compns. when fabricated and are useful for **tires** having high strength and low heat-buildup and as agents for enhancing toughness of impact-resistant styrene resins. Thus, 1,3-**butadiene**, styrene, 1,2-**butadiene**, hexane, and BuLi were mixed at 125.degree. to give **butadiene** polymn. 99%, then contacted with tetraglycidyl-1,3-bis(aminomethyl)cyclohexane (II) at 100.degree. and mixed with additives to form a polymer showing tensile strength 233 kg/cm², impact resilience (at 70.degree.) 58% and heat-buildup (at 50.degree.) 32.degree.; vs. 228, 56 and 35, resp., for a control prep'd. with SiCl₄ instead of II.

IT 63738-22-7 65992-66-7

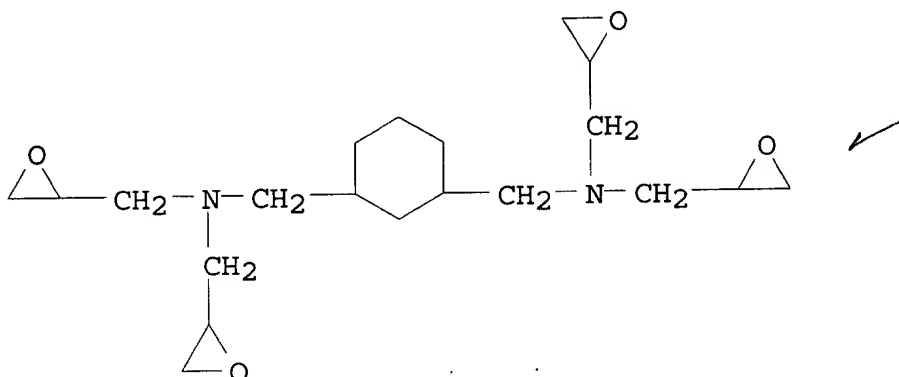
(coupling agents, for **diene** star polymers, for **tires** or impact modifiers for tough resins)

RN 63738-22-7 HCAPLUS

CN 1,3-Benzenedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl) - (9CI)
(CA INDEX NAME)



RN 65992-66-7 HCAPLUS
 CN 1,3-Cyclohexanedimethanamine, N,N,N',N'-tetrakis(oxiranylmethyl) -
 (9CI) (CA INDEX NAME)



IT 112651-47-5P
 (manuf. of impact-resistant, coupled with tetraglycidyl diamines)

RN 112651-47-5 HCAPLUS
 CN Benzene, ethenyl-, polymer with 1,2-butadiene, 1,3-butadiene and
 (1-methylethenyl)benzene, graft (9CI) (CA INDEX NAME)

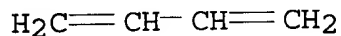
CM 1

CRN 590-19-2
 CMF C4 H6



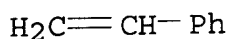
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

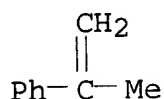
CRN 100-42-5
 CMF C8 H8



CM 4

CRN 98-83-9

CMF C9 H10



IT 9003-17-2P

(rubber, 1,2-**butadiene**-grafted, reaction products, with tetraglycidyl diamines, star, manuf. of, for tires with low heat buildup)

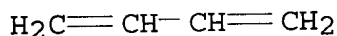
RN 9003-17-2 HCAPLUS

CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6



IT 106107-54-4P

(rubber, block, manuf. of, coupled with glycidyl amines, for low heat buildup and impact modifiers)

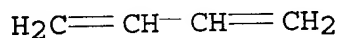
RN 106107-54-4 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene, block (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

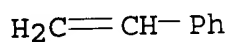
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



IT 50659-32-0DP, reaction products with tetraglycidyl diamines
112651-48-6DP, reaction products with tetraglycidyl diamines
(star, rubber, manuf. of, for **tires** with low
heat-buildup)
RN 50659-32-0 HCAPLUS
CN 1,2-Butadiene, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

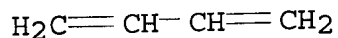
CM 1

CRN 590-19-2
CMF C4 H6



CM 2

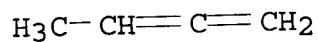
CRN 106-99-0
CMF C4 H6



RN 112651-48-6 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,2-butadiene and 1,3-butadiene
(9CI) (CA INDEX NAME)

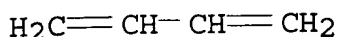
CM 1

CRN 590-19-2
CMF C4 H6



CM 2

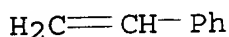
CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



- IC ICM C08C019-44
ICS C08F008-30; C08F008-42; C08F297-02; C08L009-00; C08L053-02
- CC 39-13 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 37
- ST SBR glycidyl amine coupling agent; **tire** low heat buildup
SBR; **butadiene** styrene block copolymer toughness; allene
butadiene styrene rubber **tire**
- IT **Tires**
(glycidyl diamine-coupled SBR for, with low heat buildup)
- IT Coupling agents
(glycidyl diamines, for **diene** polymers, for
tires and impact modifiers for tough resins)
- IT Rubber, synthetic
(1,2-**butadiene**-1,3-**butadiene**, manuf. of,
coupled with glycidyl amines, for low heat buildup and as impact
modifiers)
- IT Rubber, **butadiene**, compounds
(1,2-**butadiene**-grafted, reaction products, with
tetraglycidyl diamines, star, manuf. of, for **tires** with
low heat buildup)
- IT Epoxides
(amino, coupling agents, for **diene** polymers for
tires or tough resins)
- IT Rubber, **butadiene**-styrene, uses and miscellaneous
(block, manuf. of, coupled with glycidyl amines, for low heat
buildup and impact modifiers)
- IT Amines, uses and miscellaneous
(di-, glycidyl ether-contg., coupling agents, for **diene**
polymers for **tires** or tough resins)
- IT 63738-22-7 65992-66-7
(coupling agents, for **diene** star polymers, for
tires or impact modifiers for tough resins)
- IT 112651-47-5P
(manuf. of impact-resistant, coupled with tetraglycidyl diamines)
- IT 9003-17-2P
(rubber, 1,2-**butadiene**-grafted, reaction products, with
tetraglycidyl diamines, star, manuf. of, for **tires** with
low heat buildup)

IT 106107-54-4P

(rubber, block, manuf. of, coupled with glycidyl amines, for low heat buildup and impact modifiers)

IT 50659-32-0DP, reaction products with tetraglycidyl diamines
112651-48-6DP, reaction products with tetraglycidyl diamines
(star, rubber, manuf. of, for **tires** with low heat-buildup)

L41 ANSWER 30 OF 30 HCAPLUS COPYRIGHT 2003 ACS

1974:493623 Document No. 81:93623 Case bonding system for cast composite propellants. Skidmore, Paul H. (Hercules Inc.). U.S. US 3813308 19740528, 3 pp. (English). CODEN: USXXAM. APPLICATION: US 1969-808719 19690318.

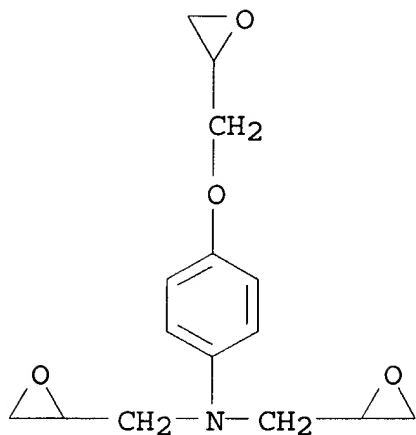
AB A process is described for bonding of the elastomeric insulated surface of a rocket-motor casing to the carboxy-contg. **rubber** lining for use with composite propellants. The insulator, such as a **SiO2**-filled **butadiene**-styrene **rubber**, is degreased with an org. solvent and a layer of a polyisocyanate, e.g. triphenylmethane triisocyanate, is applied as a soln. in an org. solvent to give a 0.002-0.030 g/in² layer, the solvent removed, and a 0.02-0.03 in. coating of a liner compn., such as a CO₂H-terminated **polybutadiene** (mol. wt. .apprx.5000, CO₂H content 0.032-0.036 equivs./100 g I). N,N,O-tris(epoxypropyl)-p-aminophenol curing agent, colloidal **SiO2**, and a metal salt catalyst-plasticizer dispersion (1.3:1 epoxoy:carbonyl equiv. ratio) applied, the liner cured 6-8 hr at 150.degree.F., a propellant dispersion contg. 13% CO₂H-contg. **rubber** similar to that of the liner cast against the liner, and the whole cured 7 days at 175.degree.F. Such assemblies had bond stresses at 0.2 in./min crosshead speed in a std. test app. of 380 psi at -70.degree.F and 73, 52, 39, and 24 psi at 77, 170, 250, and 300.degree.F., resp.; the failure always occurred in the propellant.

IT 5026-74-4

(curing agent for composite propellants)

RN 5026-74-4 HCAPLUS

CN Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-(9CI) (CA INDEX NAME)



IC C06B
NCL 149109000
CC 50-2 (Propellants and Explosives)
Section cross-reference(s): 38
ST propellant case bonding system; bonding system propellant case;
rubber lining bonding propellant case
IT **Vulcanizing** agents
(for **buadiene rubber**, N,N,O-tria(epoxypropyl)-
p-aminophenol as)
IT **Rubber, butadiene**-styrene, uses and
miscellaneous
(for rocket motor linings for cast composite propellants)
IT **Rubber, butadiene**, uses and miscellaneous
(propellant contg.)
IT Coating materials
(**rubber**, for rocket-motor **rubber** casings and
their bonding)
IT **5026-74-4**
(curing agent for composite propellants)